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SPRINGFIELD
TECHNICAL
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COLLEGE

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President's Message

In this age of contrast and conflict, we, of another generation, must look to you, the next generation of citizens, to discover the form and direction of the future. A good education is mandatory if you are to cope with the problems and challenges that will face you during your lifetime. The experiences you could gain by attending an institution of higher learning will offer you the opportunity to learn more about the world around you--its past, its present, and its future, for you are its future.

As a young and developing institution, Springfield Technical Community College can devote its energies to meeting the needs of its most valuable resource--you, the student. STCC is a college which dedicates itself to the development of its students as individuals and as scholars.

We at STCC are trying to aid in the development of a more humane society, one which will appreciate the worth of each individual. We are working to educate our students as knowledgeable and contributing participants in a world community we must all live in and share together.

Edmond P. Garvey
President

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of
Regional
Community Colleges**



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Springfield

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Springfield





Springfield Technical Community College

Administration

— OFFICERS —

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President

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Acting Dean of Faculty

PAUL W. BERWICK, JR.
Dean of Students

JOHN J. FORTSCH, JR.
Dean of Administration

DR. GILBERT M. ROSENBRIER
Dean of Academic Affairs

— STAFF —

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Director of Admissions

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Director of Continuing Education

J. STANLEY CUMMINGS
Director
Cooperative Education Program

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Registrar

MILDRED H. FITZGERALD
Bursar and Financial Officer

ROSE M. SULLIVAN
Secretary to the President
Office Manager

DR. ARGELIA M. HERMENET
Director of Bicultural Program

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Assistant Registrar

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Counselor

LEONARD K. LOCKLEY
Counselor

CHARLES B. ZUMWALT
Placement Director

LINDA J. MACINTOSH
Cataloger

Teresina B. Thompson
Dean Emeritus

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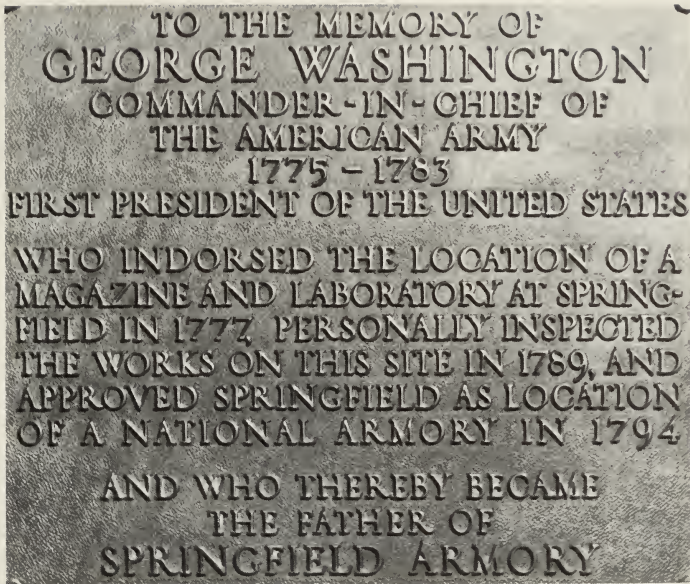
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NEW ENGLAND
ASSOCIATION
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AND COLLEGES
ACCREDITED MEMBER

This catalog is published as a convenient source of information for prospective students and for the general public. The College reserves the right to add or to withdraw courses and programs or to revise any provision or requirement described herein.



HISTORY

No other community college in Massachusetts, perhaps none in the nation, is as fortunate in its location as is Springfield Technical Community College. This area, two hundred feet above sea level, the highest in downtown Springfield, was inspected by General Washington in October, 1789. Congress established the United States Armory here in April, 1794.

The beautiful fifty-four-acre campus has an inner quadrangle completely surrounded by mellow red brick buildings with many muntined white-framed windows. Now quiet and serene with soft green turf, it was once noisy and dusty from the tramping feet of the garrison. Here Eli Whitney, the originator of interchangeable parts, did much of his early work; Thomas Blanchard invented the first lathe capable of turning irregular forms; and Captain A.B. Dyer established the highest standards then known for quality and precision.

This hallowed historic place must necessarily inspire our students to strive for high competence in technology and sincere dedicated citizenship.

Established in 1964 by the City of Springfield as the Springfield Technical Institute, the school became the Springfield Technical Community College by act of the Great and General Court (state legislature) in 1967. Initial enrollment of 400 students with a faculty of 20 has grown to 3000 served by a teaching staff of 184.

Philosophy

One of the primary responsibilities of a democracy is to provide for the education of the individual citizen to his maximum ability. Because the local community is the center of American life, the community must always have a direct concern for the self-realization of each of its citizens. The accomplishment of this objective is a major concern of the community college. Therefore, to maximize their chances of success, Springfield Technical Community College maintains an open door to all citizens of the community which it serves who indicate any likelihood of academic success at the college level.

To further this overall opportunity for self-advancement, the College functions as a cultural center for the community and thus provides a source of enrichment for its citizens and a stimulus for raising their levels of aspiration and accomplishment.

Objectives

The objectives of the College are:

1. To provide high-quality, low-cost education for qualified high school graduates who wish to complete two years of college on a commuting basis
2. To provide students with the opportunity for the development of social maturity through a well-balanced program of student activities

3. To provide students with comprehensive services in academic and personal counseling, occupational guidance, and job placement
4. To provide opportunities for continuing education for adults residing in the area served by Springfield Technical Community College.

The prime objectives of the College are, therefore, to educate its students to a high degree of competency in the technology of their choice and to support that competency with a solid working knowledge of mathematics, fundamentals of science, written and oral English, social sciences, and exposure in depth to the principles and the methodology of that particular technology.

Academic Accreditation

The College recently received full accreditation under the New England Association of Colleges and Secondary Schools. The College thus joins the ranks of many other well-known accredited institutions of higher education throughout the region and the country. In addition, the College possesses numerous additional types of accreditation and certification which are directed toward specific academic programs including: Dental Assisting, accredited by the Council on Dental Education of the American Dental Association; Medical Laboratory Assisting, approved by the Board of Certified Laboratory Assistants; the Board of Schools of Medical Technologists; and by the American Society of Clinical Pathologists. The Respiratory Therapy Program sponsored in cooperation with Mercy Hospital has been approved by the Board of Schools of Inhalation Therapy.

Memberships

The College is a member of the American Association of Community and Junior Colleges, the New England Junior College Council, the New England Association of Colleges and Secondary Schools, and the American Technical Education Association.

The College is also approved by the Board of Collegiate Authority, the Massachusetts Department of Education; the Massachusetts Rehabilitation Commission; the United States Office of Education for federal assistance from any unit of the Department of Health, Education, and Welfare; the United States Veterans Administration for the admission of veterans and war orphans; the United States Department of Justice as a place of study for non-immigrant students; the United States Office of Education for the National Defense Student Loan Program; and the United States Internal Revenue Service as a non-profit organization.

Faculty

Because Springfield Technical Community College is an institution dedicated to the mission of a community college, the task of learning and growing is a highly personal one. Students can have direct contact with the school's faculty, including department and division chairmen, and upper echelon administrators on a day-to-day basis. Although many faculty members have earned recognition for their contribution to research and scholarship, the primary responsibility to teaching remains the forte of the College. Of the 184 members of the faculty, there are 27 doctorates and 111 masters' degrees in various areas of specialization. The teaching faculty is supported by an able and dedicated body of administrators and counselors who provide innumerable support services in such areas as counseling, placement, financial aid, health services, transfer assistance, etc.

Degree Programs

The student population enrolled in the numerous academic programs offered by the institution is divided into those in liberal arts programs and those in occupational programs. Thirty-seven percent of the students in the College are pursuing Associate in Arts or Associate in Science degrees in the arts and sciences, engineering, and business with the intent of transferring to a four-year college or

university upon receipt of their degree. The remainder of the student body is enrolled in degree programs which are also transferable but are more specifically designed for job entry into a variety of advanced technologies. In the engineering technology field the student may enroll in programs in any of the following fields: Automotive Technology, Bio-Medical Instrumentation Technology, Civil Engineering Technology, Data Processing Technology, Electrical Technology, Electronics Technology, Environmental and Process Technology, Graphic Arts Technology, Heating and Power Technology, Landscape Technology, Machine and Tool Design Technology and Mechanical Technology (Production Option).

In the health technology field, the student may enroll in programs in any of the following fields: Dental Assisting (Certificate), Dental Hygiene, Medical Assisting (Certificate or A.S.), Medical Laboratory Assisting (Certificate or A.S.), Mental Health Technology, Nursing, Operating Room Technology (Certificate), Physical Therapy Assisting, Radiologic Technology, and Respiratory Therapy.

In the business field, the student may enroll in any of the following programs: Business Administration (Accounting/Finance/Marketing/Management), and Secretarial Science (Executive/ Legal/Medical).

A new and emerging division deals with services and is made up of programs such as Cosmetology, Early Childhood Assistant, Fire Science, Law Enforcement, Public Administration, Telecommunications Technology, and Student Development.

In most cases the total number of credits required for graduation falls within 60-70 credits and can be completed within two years. The two-year duration is not a requirement, however, since the student may progress at a rate concomitant with his motivation and ability.

Continuing Education

Springfield Technical Community College offers through its Evening Division Program a wide range of activities to meet local, social, economic, cultural, and civic needs. These activities may be credit or non-credit, depending upon individual preference.



The Evening Division also fosters associations with various groups and organizations within the relatively large urban region served by the College. From time to time, conferences, institutes, and seminars are offered by the Evening Division for those people in the region who have evidenced an interest in a particular subject or discipline. Finally, the Division offers courses at off-campus locations at Westover AFB and Palmer. The offerings are carefully selected to meet predetermined community and individual needs.

Many times programs of instruction are generated by the employment picture persisting in the Springfield area. Employers themselves often instigate the development of new courses and programs in collaboration with college authorities. College personnel

constantly seek out new and developing areas requiring assistance from the school in the form of complete two-year technical programs, vocational preparatory courses lasting from several days to a year or more in length, and short vocational courses designed to up-grade the working man's skills. From these efforts a constantly expanding technical and career program base is developed, supplemented by special activities to serve both the short range and recurring needs of the community. Anyone desiring additional information should contact:

Director of Continuing Education
Springfield Technical Community College
One Armory Square
Springfield, Massachusetts 01105

Community Services

One of the notable developments at STCC has been the initiation and expansion of community service programs. Given impetus by the needs of the socio-economically deprived, the special need of adults and the problems of the urban city, a rather comprehensive set of community service functions has emerged. In the past the College has made notable inroads in services by offering conferences, workshops, and symposia to professional groups through the Division of Continuing Education.

As the College moved into the 1970's it began a concerted effort to further serve the community.

This effort included:

1. A massive grant application program generating additional staff, equipment, and services
2. Extension of daytime credit programs into evening hours and establishment of extension centers throughout the service area

3. An increasing selection of non-credit course conferences and workshops to respond to the more immediate interests and needs of local citizens
4. A widening use of advisory groups representative of the broad spectrum of people and needs to be served (including minority group constituencies)
5. Broadening use of college facilities by an increasing variety of community organizations and informal groups
6. A continuing effort to interpret community service activities to all citizens through a systematic program of public information
7. Increasing concern for professionalization of the program reflected in staffing patterns as well as professional development programs for staff members

Building Program

Beginning in 1971, the College launched, with the support of the State Legislature, an aggressive construction program. The first building to undergo change was the Automotive Technology Building, which was refurbished and completed during that year.

A new Allied Health Services Building is scheduled for completion in the fall of 1972; a Humanities Building in 1973; and a Physical Science Building and a Biological Science Building in 1974; the result of a twenty-four million dollar investment in new classroom buildings and laboratories furnished with the most modern equipment available.

The Master Plan for the new campus also includes an Engineering Technology building, an Auditorium, a Library and Learning Resources Center, a Student Union building, a Physical Education building, and a Mechanical Technology building.

ADMISSION AND FEES

Springfield Technical Community College encourages applications without regard to age, sex, race, religion or national origin. Admission to the College requires a high school diploma or its equivalency. The Director of Admissions may determine in some cases that a mature, responsible adult may be admitted to the College without the diploma or its equivalency. This in no way guarantees such a student entrance into a specific academic program.

Every consideration will be given to any applicant who possesses a diploma without regard to the curriculum pursued in high school. The applicant should take note, however, of the numerous requirements demanded by specialized college programs.

The Scholastic Aptitude Test (SAT) of the College Entrance Examination Board is required of all applicants admitted to the College. Applicants who have been out of school for several years may be excused from this requirement with several notable exceptions listed below.

A high school equivalency diploma (General Education Development Test-GED) may be earned by passing a battery of tests administered by the College several times each year. Further information about the tests may be obtained from the Division of Continuing Education.

Students are advised to carefully study special requirements which are established by the program into which they seek admission.

CLEP and Challenge Examinations

The College will award up to 30 credits to persons who successfully complete examinations in specific subject areas given at the College under the aegis of the College Level Examination Program (CLEP).

The CLEP examinations cover a wide range of disciplines and allow applicants to demonstrate proficiency in areas where they have acquired knowledge through non-traditional learning situations. Credits received by CLEP examinations allow the College to waive introductory courses which the student would be otherwise required to take.

The College is in the act of producing challenge examinations in subject matter areas not found in the CLEP battery so that people who wish to demonstrate competence in specialized areas may do so.

Students who feel that they possess above average competence in a subject area should not hesitate to contact the Director of Admissions for further information and consultation.

Application Procedure

Students desiring admission to the College may obtain an application by writing to the Director of Admissions, Springfield Technical Community College, One Armory Square, Springfield, Massachusetts, 01105. Students attending high schools in close proximity to STCC could expedite the application process by contacting their guidance department for an application form. Applications should be filled out completely and returned to the College as soon as possible. This application must be accompanied by a non-refundable application fee in the amount of \$10.00 (check or money order) payable to STCC. Though no deadline exists, the popularity of certain programs dictates the necessity of application during the early part of a student's senior year.

The first review of applications takes place upon receipt of the first senior year grades. It is each applicant's responsibility to insure that a transcript of his high school marks is sent to the College. As a matter of policy, the Admissions Office will not accept the responsibility for obtaining transcripts.

The College generally uses the Rolling Admissions procedure. This means that upon receipt of all necessary documents for admissions, the Director of Admissions will notify the applicant as soon as practicable.

An applicant to the College must have graduated from high school (or have an equivalency diploma) with 16 units of credit distributed as follows:

1. Liberal Arts Applicants: English---4 units; mathematics---3 units; foreign language---2 units; history---1 unit;

electives--6 units.

2. General Studies Applicants: English--4 units; history--1 unit; electives-- 11 units.
3. Engineering Transfer Applicants: English--4 units; mathematics--4 units; science--2 units; history--1 unit; electives--5 units.
4. Business Administration Applicants: English--4 units; mathematics--2 units; history--1 unit; electives--9 units.
5. Technology Applicants: English--4 units; algebra--2 units; science--1 unit (physics or chemistry); history--1 unit; electives--8 units.
6. Nursing and Dental Hygiene Applicants: English--4 units; algebra--2 units; science--2 units (chemistry required); history--1 unit; electives--7 units; SAT scores totalling 800 or above; rank in top quarter of class.
7. Allied Health Science Applicants: All require: English--4 units; history-- 1 unit; biology--1unit; in addition to the special requirements below:
 - a. Respiratory Therapy: Chemistry--1 unit; algebra--2 units.
 - b. Medical Laboratory Assistant: Chemistry--1 unit; algebra--2 units.
 - c. Physical Therapy Assistant: Chemistry--1 unit; algebra--2 units.
 - d. Radiologic Technology: Chemistry and/or Physics--1 unit; mathematics--3 units.

The balance of credits may be from elective areas.

Appointments for Interviews

The College does not require interviews except for applicants to Dental Hygiene, Dental Assisting, and Nursing programs. Applicants are encouraged to seek help with career choices by exploring various programs with the counselors and staff. Interviews may be arranged by phoning or by writing the Admissions Office for an appointment.

Transfer into the College

Applicants who have had previous college experience must submit all college transcripts whether or not they are seeking transfer credit. The College accepts a maximum of 30 credits transferable into the College for courses taken at other institutions. Only courses in which the student has received a grade of C or better, which fulfill the student's requirements and are similar in content to those required in the student's program at STCC, will be accepted.

January Admission

Transfer applications will be accepted for admission to the College in both September and January. The exception to this practice lies in the health technology programs.

Transfer Program Students

Many students attending the College consider, at some point in their career, transferring to a four-year institution. There are numerous specific programs at the College that are designed with a distinct transfer purpose. Students enrolled in these programs should be in early and constant contact with a counselor so that their course progress toward transferring to a four-year institution is expedited.

Career Program Students

Students enrolled in career oriented programs occasionally wish to continue their education by transferring to a four-year institution. Recently, great opportunities have become available for career program students to avail themselves of special baccalaureate programs which have been developed in four-year colleges. It is highly advisable for a career program student who wishes to continue his education to immediately seek advice and guidance in the counseling center.

Veterans

Veterans whose service is credited to the Commonwealth of Massachusetts may attend the College tuition free. In addition to following the standard application procedure, veterans must simultaneously submit a copy of their DD214 separation papers. In order to qualify for such a tuition waiver, the veteran must have been a resident of Massachusetts at the time he joined the service.

Tuition Fee

The Commonwealth of Massachusetts has set tuition at \$125.00 per semester* for State residents and \$300.00 for non-residents. Part-time students pay \$16.00 per credit with a maximum of \$125.00 per semester*. The charge for Course Auditing is set at \$21.00 per course. Under an agreement among the New England States, students from any of the six states may attend college in another of the six states for the same tuition as a resident of the state, provided that the program desired is not available in their state or that the community college is closer than that in the home state.

Student Activity Fee

To promote athletics, student affairs, clubs, and scholastic endeavor such as student publications, each student must pay a yearly student activity fee. The rate is set yearly by the student government. The fee is non-refundable and paid in advance as a reservation fee.

Parking Fee

Parking is quite limited on campus. Seniors may park on campus up to the limit of space for a \$1.00 per year fee. Off-campus parking is available near the college for varying prices through the Student Association.

**\$150 per Semester, September 1973*

Graduation Fee

To cover the costs of the graduation ceremony and the graduate's cap and gown, the college assesses each student a \$15.00 fee. The student is charged with this amount at the same time as he receives his fourth semester bill.

Insurance

The Commonwealth of Massachusetts requires each student to purchase through the College an accident insurance policy for a minimum charge. Optional plans under this policy may be purchased to provide hospitalization and twenty-four hour protection. Information about insurance will be sent to each admitted student.

Books and Supplies

Estimated costs for books and supplies vary by department, but \$100.00 to \$150.00 per year should pay for most books and supplies. The College bookstore, operated by an outside concern provides, at reasonable costs, many of the items that the student requires during his stay at STCC.

Payment of Bills

All tuition and fees are payable before each semester begins. No deferred payment plans or partial payment plans are available. If payment is to be made by agencies or scholarship programs, arrangements must be made in advance with the Finance Office.

Refunds

Refunds are made only to those students who officially withdraw from the College. In order to do this, a student should personally or by written communication notify the Dean of Students of his decision. The College will thereupon refund a portion of the student's tuition according to the following schedule established by State regulations:

Withdrawal during first week	90 percent
Withdrawal after one week	70 percent
Withdrawal after three weeks	50 percent
Withdrawal after four weeks	no refund

It should be noted that no provision is made for refunds for any other fees or charges made by the student except for tuition.

EXPENSES

Summary of Tuition and Fees

The following fees are the approved charges authorized by the Massachusetts Board of Regional Community Colleges for the academic year:

Application Fee (nonrefundable)	\$ 10.00
Tuition for Massachusetts Residents	250.00*
Tuition for Out-of-State Students	600.00
Tuition, Part-time (per semester hour)	16.00
Student Activities Fee	
Full-time students	30.00
Part-time students	15.00
Late Registration Fee	5.00
Change of Course Fee	3.00
Make-up Examination Fee	5.00
Student Insurance (Mandatory)	2.50
Student Insurance (Optional)	
Supplemental 24-hour	
Accident and Sickness Plan	27.50
Transcripts	
First	no charge
Each Additional	1.00
Graduation Fee (payable	
at the beginning of the semester	
preceding graduation)	15.00

* September 1973--\$300 per year

ACADEMIC REGULATIONS AND HONORS

The academic year at Springfield Technical Community College opens in early September and closes in early June. The academic year is divided into two semesters with the first semester ending prior to Christmas vacation and the second semester resuming in the latter part of January. A mid-semester break is provided halfway through the spring semester. Shorter holiday periods occur during the Thanksgiving and Easter holiday seasons. The final week of each semester is devoted to final exams. Unless a formal change is published, the calendar in the STCC Student Handbook is to be considered official and will be adhered to.

Class Schedule

In the majority of cases, with the exception of Directed Study courses, three-credit courses meet three times a week and are of 50 minutes' duration, or are 75 minutes long and meet twice a week. Exceptions may be found in career curricula and other special programs.

In the case of most science and professional courses, laboratories are an integral part of the learning process.

Class hours begin at 8:30 a.m., Monday, Wednesday, and Friday and end at 4:30 p.m.; at 8:00 a.m. Tuesday and Thursday, and end at 4:20 p.m. Time for lunch is left to the discretion of the student and his schedule.

Hours not reserved for classes, examinations or convocations in a student's schedule are unrestricted.

Class Attendance

The faculty of the College has voted to allow each instructor to set his own classroom attendance policy. The faculty also recommends that each instructor notify his students in writing at the start of each semester of his attendance policy.

The Dean of Students will, upon request from an instructor, warn students when they have exceeded an instructor's attendance policy, and may, at the recommendation of the instructor, withdraw such a student from that class.

Off-campus activities, appropriately supervised and sponsored by faculty members, which appear to justify a student's absence from scheduled classes, must be approved by the Dean of Students. Such activities must be justifiable on grounds consistent with the educational program of the College. Whether a student is excused from class or examination to participate in such activities is determined by the instructor concerned.

Warnings

Midway in each semester, those students who are at or near the point of failure in any course will receive a warning to that effect in writing. This admonition does not become a part of the student's permanent administrative record. However, its issuance requires that the student consult immediately with the professor concerned and with his faculty advisor for possible help and guidance.

Examinations and Grades

Final examinations are scheduled for each course. At the end of each semester, all students receive written letter grades according to the following standards:

Letter Grade	Qualitative Equivalent	Quality Points Earned Per Credit Hour
A	93 through 100	4.0
A minus	90 through 92	3.7
B plus	87 through 89	3.3
B	83 through 86	3.0
B minus	80 through 82	2.7
C plus	77 through 79	2.3

Letter Grade	Qualitative Equivalent	Quality Points Earned Per Credit Hour
C	73 through 76	2.0
C minus	70 through 72	1.7
D plus	67 through 69	1.3
D	63 through 66	1.0
D minus	60 through 62	0.7
F	Below 60	0.0
I	Incomplete	no grade
W	Withdrawn	no grade
Au	Audit	non-credit*

*Non-credit courses are not figured in the Q.P.A.

The grade of Incomplete (I) indicates that a major requirement of the course has not been completed. Unless the deficiency has been made up within one month after the grade has been reported, the Incomplete grade automatically becomes an F on the student's permanent record.

Make-Up Examinations

A student failing to take a semester examination may apply in writing to the Dean of Students for permission to take a make-up examination. If, in his opinion, absence from the regularly scheduled examination was unavoidable, the student may take a make-up examination upon payment of a \$5 fee.

Registration

Registration is held during the first week of school of each semester. At this time students may add and drop courses. Admittance to a course at this time is, however, dependent upon the seats available. Students wishing to add a course after the first week will be subject to a late fee of \$3 per course addition.

Pre—Registration

Pre-registration for the spring semester is held in November while pre-registration for the fall semester is held in April. Students expecting to return for the next semester must pre-register with their department chairman. It is the student's responsibility to seek out information concerning departmental course requirements prior to pre-registration. This may be done with the assistance of his department chairman, advisor, or counselor.

Students who fail to pre-register within the allotted time will be subject to a \$5 late fee.

Course Changes

Students are permitted to add and drop courses during the first week of classes without penalty. Any changes made thereafter will require the payment of a \$3 fee by the student to the Financial Office. No change will be permitted beyond the second week of classes unless approved in writing by the instructor of the course to be added and the Registrar.

Program Changes

A program change is defined as a change of major or department and, though permissible under certain guidelines, should only be undertaken with considerable thought and counsel. A student who is seriously considering a program change should seek immediate advice in the counseling center.

The major requisite for this type of change is the consent of both the Chairman of the department that he wishes to leave and that of the Chairman of the department into which the student is seeking admission.

It should be noted that a student making such a change may suffer such consequences as the postponing of his graduation because of the necessity of taking prerequisite and core courses in his new department.

Course Withdrawal

Students may withdraw from a course through the fifth week without being recorded as enrolled in that class. Students may withdraw from a course between the end of the fifth week and prior to the twelfth week with a "W" grade recorded on his permanent record. Withdrawal after the twelfth week will be recorded as a failing grade except in certain cases when the instructor and the Dean of Students find extraordinary circumstances meriting a "W" grade. All withdrawals must be made officially through the counseling center.

Re-Admission

Any student who has been dismissed for academic deficiencies may be re-admitted by bringing up his cumulative quality point average (CQPA) to the minimum standard required by the College.

Any student who has attended summer or evening school and has raised his CQPA to the acceptable level should thereupon formally reapply to the Director of Admissions.

Repetition of Courses

Any student who receives a grade in a course that is unsatisfactory to him may repeat that course and both grades will appear on his permanent record. However, only the second grade will be calculated into his quality point average.

In order for this policy to be in effect, a student is required to inform the Registrar that he is repeating a course prior to doing so.

Auditing of Classes

Students may attend certain classes as auditors (i.e., without receiving credit) under the following conditions:

1. Permission must be obtained from the Registrar during registration period.

2. All established charges for the course must be paid.
3. Priority in registration will be given to students who are registering in the course for credit.
4. Audit courses will be reflected on students' permanent record as Audit.

Dean's List

In order to recognize above-average academic performance, a Dean's List is published each semester. Any student carrying 12 or more semester hours who earns a 3.0 quality point average is placed on the Dean's List, providing that student has no grade less than a C in that semester.

President's List

In an attempt to recognize extraordinary achievement, the College has instituted a President's List. In order to be eligible for this meritorious honor, a candidate must be a full-time day student carrying a minimum of 12 credit hours and must attain a quality point average (QPA) of 3.80.

Honor Societies

The Alpha Nu Omega Honor Society has its Alpha Chapter at STCC. The purpose of the honor society is to stimulate within the student body a desire for self-improvement and intellectual growth by acknowledging academic achievement.

Membership in Alpha Nu Omega is open to any member of the student body who attains a 3.3 cumulative grade point average in a 12-credit semester toward an Associate Degree. A probationary period of 1 semester will be granted to all honor society members who attain at least a 3.0 average. Members must have at least a 3.5 average to be eligible to run for office.

At the end of the first semester, students having the required average must make their intentions of joining the honor society known to the Dean of Students. Induction into Alpha Nu Omega will be held in the middle of the second semester.

Academic Standing

The quality point index required to be in good academic standing is as follows:

Beginning of the second semester of enrollment, a quality point average of 1.5.

Beginning of the third semester of enrollment, a cumulative quality point average of 1.7.

Beginning of the fourth semester of enrollment, a cumulative quality point average of 1.9.

In order to graduate in an Associate Degree program, a student must satisfy the requirements of his department and must have earned a cumulative quality point average of 2.0.

A student not meeting the aforementioned standards will be placed on academic probation and may be asked to withdraw if no academic improvement has taken place.

The accumulation of credits alone does not necessarily mean that a student is entitled to a degree. Normally, a student must earn a minimum of 60 credits in a specific curriculum. In some departments this minimum is exceeded.

Graduation Requirements

The Board of Regional Community Colleges has statutory authority to confer associate degrees through the individual Community Colleges. Upon recommendation of the faculty, those candidates who qualify may be awarded the degree of Associate in Arts (A.A.) or the degree of Associate in Science (A.S.). Candidates for degrees shall have fulfilled the following requirements:

1. Completion of the courses required in the program in which the student is enrolled. He must present at least 60 credit-hours of which a minimum of 30 must be in residence at the college and must meet all departmental requirements. In all programs except nursing, the student must have completed at least 20 credits in general studies.
2. The student must have earned a minimum CQPA of 2.0.
3. The student must have satisfied all financial obligations to the College, including the payment of a graduation fee of \$15 at the beginning of the semester preceding graduation or when 45 credits have been earned toward graduation.
4. A National Defense Student Loan recipient must have completed the exit interview with the Student Aid Officer or his representative.

Under certain circumstances, a student who has not met these requirements may be permitted to re-enter the day, evening or summer division of the College in order to expunge deficiencies and to earn a degree by continued study.

Degrees earned by mid-year will be conferred the following June; the diploma, however, will record the date the degree was earned.

Graduation Honors and Prizes

Each year, at Commencement, students with a cumulative quality point average of 3.80 are graduated with highest honors; those with a cumulative average of 3.50 to 3.79 are graduated with high honors; and those with a 3.30 to 3.49 cumulative average are graduated with honors. Students with highest honors wear a gold colored stole; those with high honors wear a maroon stole.

Edmond P. Garvey Award

This award was established by the Class of 1970 and is presented annually to two seniors who, by virtue of their outstanding accomplishments, both at the College and in the community, have enriched the lives of their fellow students and all others associated with Springfield Technical Community College.

President's Cup

Awarded to that member of the senior class who has displayed by his conscientious endeavor, clean play, good sportsmanship, and all-round ability as an athlete and scholar, that he is a credit to his team and Springfield Technical Community College. The Cup was established by the student body in the hope that it will stimulate and encourage students to emulate the President's character, wholehearted enthusiasm, good sportsmanship, true cooperation, and the constant endeavor to always give to the best of their ability in any project that they may undertake.

Isabell V. Kendrick Award

Excellence in clinical laboratory and academic achievement in Dental Assisting is the basis for this award given in memory of the first chairman of the Dental Assisting Department. The award is offered by the Valley District Dental Society.

Teresina B. Thompson Award

Awarded to the outstanding member of the graduating class in the allied health science field in honor of Mrs. Teresina B. Thompson, Dean of Faculty from 1967 to 1972, now Dean Emeritus, who has made such substantial contributions in the field of Allied Health Technologies and who has initiated our Health Programs at STCC.



SPORTS



MUSIC



QUEEN

STUDENT LIFE

Although it serves students from many other states and foreign countries, Springfield Technical Community College is primarily a commuter college. Since a dormitory system does not exist to provide a base for student affinity, the College takes special care in providing the kind of organizational structure which will foster a spirit of community at the institution.

College Governance

The interest and opinions of students are sought at all levels of college governance. The faculty and administration rely heavily on student suggestions and recommendations in planning and operational activities which have a bearing on student life. Voting student members sit on many of the faculty committees.

Student Association

All students are members of the Student Association of Springfield Technical Community College. The student organization sponsors and makes possible a wide range of student activities. The Student Senate, representing the student body, approves the functions of organizations on the campus, administers the budget for student affairs, and works closely with the Dean of Students, faculty, and staff to provide a wholesome and beneficial exposure to extracurricular activities during the college year.

The Student Senate, in collaboration with a faculty committee appointed by the President, arranges cultural programs involving outstanding people in national and international affairs, the performing arts, the sciences, and the humanities. These events are all sponsored by the Student Association.

Student Commissioner

In 1969 the Massachusetts Legislature passed a bill which provided for the election of a student to serve as a bona fide member

of each of the boards of trustees of all public institutions of higher education in the state. In order to elect a student trustee to the Massachusetts Board of Regional Community Colleges, each college holds an open election which results in the selection of a student commissioner. One commissioner from each of the fourteen colleges serves on the Student Advisory Commission (SAC) to the Board. Annually the members of the SAC elect a chairman who serves in that capacity and is appointed by the Governor to be a voting member of the Massachusetts Board of Regional Community Colleges. Thus a new student trustee is elected each year to represent the students of the community college system.

Code of Conduct

It is taken for granted that when a student is admitted to the College, he has an earnest intellectual purpose and that he will comply with the school regulations of conduct and behavior. If, however, an offense occurs, whether it be in violation of the rules of good conduct or academic duty, the College authorities will take such action as seems to them merited in view of the circumstances of the particular case. Students who fail to take advantage of the opportunities provided for them by the Commonwealth may expect to have their privileges curtailed or withdrawn.

A Code of Conduct is currently being developed by the Student Review Board. This board consists of students, faculty, and administrators. Until a specific code is presented to the student body, the student should be guided by common sense, good judgment and respect for the rights of others.

Classroom Responsibilities

The faculty of the college recognizes the importance of, and encourages, student inquiry and freedom of expression as essential to academic freedom. Meaningful classroom contribution on the part of students and respect for the ideas and opinions of others are deemed to be of equal importance in the learning process.

Part-Time Employment

The College does not encourage students to work in their freshman year. Classroom attendance, homework, commuting, and personal affairs will occupy most of their time. Those who must work should allocate their time carefully in order not to jeopardize their academic standing. The College considers scholastic achievement and financial need in offering occasional part-time work in the administrative offices and with the custodial staff.

Alcohol, Narcotics and Drugs

The possession or use of alcohol, narcotics and drugs as defined by the laws of the Commonwealth of Massachusetts is prohibited on campus and at all college sponsored off-campus activities.

Students' Guest Privileges

Guests invited to the campus or to student sponsored activities will be expected to conform with the rules and regulations of the College. Each student is responsible for the conduct and behavior of his guests.

Guest Speakers

Students who wish to invite guest speakers to the College shall receive prior approval from the Dean of Students.

Off-Campus Residence

The State Community College System has espoused a policy that will place a community college within a commuting distance of every student in the state. As a result of this policy, the community colleges are non-residential in philosophy and in fact.

Springfield Technical Community College realizes that it offers a wide variety of programs not available at other community colleges or institutions which attract many students who are not within commuting distance. In order to assist these non-commuting students, the College has found that in the past the facilities provided



SPRINGFIELD YMCA

by the YMCA and the Carlton Motel have more than met the needs of students.

Other housing accommodations are readily available in close proximity to the College. The College, however, assumes no responsibility for students living off campus.

College Activities

The College is most fortunate to find itself in close proximity to a wealth of social and cultural institutions which are nationally recognized and will serve to enhance the student's personal, academic and overall growth.

In addition to the availability of these outside resources, the College fosters and provides a whole spectrum of activities for its students.

Cultural Clubs

The Afro-American Club, the Drama Club, the Literary Club, and the Art Club provide members and students with activities which cultivate the cultural riches of the College and the community.

Professional Clubs

In order to foster a wider range of understanding of their particular fields of interest, students are encouraged to form clubs with professional emphasis and leadership. To date, the special interest clubs are the Business Club; Data Processing Club; Dental Hygienists' Club; the Nurses' Club; the Radiologic Club; and the Radio Club, which runs an AM-FM radio station, WTCC.

Social Clubs

Social Clubs exist to promote and enhance the social activities of its members and the College in general. The Veterans' Club and the Camping Club are representative of this category. The Veterans' Club also serves to inform those who have served in our armed forces of the benefits and privileges to which they are entitled.

Other Clubs

On campus the student will find such organizations as the Photography Club and the Rifle- Pistol Club. The goals of these are the extension and enrichment of special areas of interest through instruction and competition.

Athletics

Springfield Technical Community College is a member of the Massachusetts Community College Athletic Association, which consists of fourteen state community colleges divided into two divisions:

EASTERN		WESTERN	
Middlesex	Massasoit	Quinsigamond	Holyoke
Mass. Bay	Franklin Park	Greenfield	Berkshire
Northern Essex	Cape Cod	Springfield	
North Shore	Bristol	Mt. Wachusett	

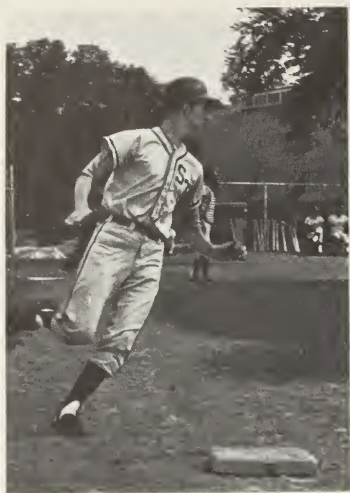
During the past year, STCC has made notable strides towards building one of the most successful athletic programs among community colleges in Massachusetts.

Varsity sports for men include soccer, basketball, hockey, golf, and baseball. In addition, football was initiated at STCC this past season as a varsity sport and has gained enthusiastic support among the student body.

With rapidly increasing enrollment in recent years bringing an even greater interest in athletics, STCC is expanding in both intercollegiate and intramural competition beyond its already full program. Intramural programs offer an opportunity for wide participation by members of the student body. Students who do not have the skill or desire to participate in intercollegiate sports are able to enjoy similar experiences without having to join the varsity squads. Presently the intramural program includes touch football, volleyball, marksmanship, and bowling.

Student Union

One of the most recent additions to student activities is the Student Union. It was formed to provide students with a place to gather informally during the day. The Union also serves as an information center and a locus of social and cultural life on campus. The Student Union is still a growing organization but plans to increase its role in the social, cultural and leisure life of the student



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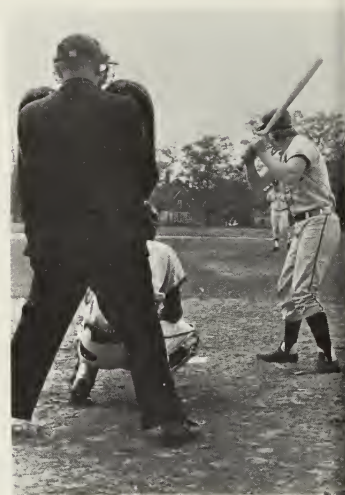
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on campus. All full-time day students are members of the Union and are encouraged to use its lounges and recreational areas.

CCGS

The College attempts to introduce its students to a variety of social and cultural events both within the community and the other colleges in the Greater Springfield area. To accomplish this objective, STCC has joined with seven other colleges to form the Cooperating Colleges of Greater Springfield group for social-cultural events. Thus, any student can attend a great variety of plays, concerts, athletic contests, coffee houses, film series, speaker series and the like, on any of the eight college campuses, for only a nominal fee. The colleges publish a joint social-cultural events calendar which is distributed to students monthly on all campuses. Also, a student at STCC may, by properly identifying himself, visit any of the eight college libraries to study or take out reference materials.

Food Services

A spacious cafeteria seating over 500 persons is located on the ground floor of Building 20. It is open each weekday at 7 a.m. and features a fast-food approach. The student may obtain breakfast, snacks, coffee, sandwiches, lunch and full dinners. All food is prepared right on the campus. Adjacent to the cafeteria is a student lounge; also, a private dining room used by faculty and students for special functions. Satellite eating areas with modern vending machines are strategically located throughout the campus.

Building 20 has been especially designed by the College architects to allow wheelchair students and others with physical handicaps to move around with ease. Special ramps leading from the parking lot to the interior, wide doors and hallways, and several elevators throughout the building allow complete mobility without any obstructions.

Student Handbook

A student handbook is published yearly to serve as an

orientation and information tool to students. The handbook outlines student services, academic and social rules and regulations, student government, athletic programs, and many other items of information necessary to students.

Student Publications

The journalistic talents of numerous literarily inclined students are utilized in the preparation of a bi-monthly newspaper and the yearbook.

Puck, a bi-annual Literary Publication, produced by members of the English Literature classes, contains poetry, fiction, drama, essays, and art work.

The newspaper is produced by the journalism classes of the College, but all students are encouraged to contribute. The students produce a yearbook, too, which has never failed to become the historical chronicle of its class. Both organs are entirely student-oriented from planning to printing.

A student or group of students in connection with any publication, public performance, or social activity shall not use any name or designation that implies a relationship with the College without the sanction of the President of the College or an officer designated by him.

FINANCIAL AID

As more and more people seek higher education, Springfield Technical Community College is making an intensive effort to aid its students in obtaining financial assistance in order that no young man or woman be denied a college education because of economic barriers. Based on an individual's financial need, the Financial Aid Office allocates funds to assist eligible students in paying for the cost of their college education. Assistance is provided through several sources; frequently, a student receives a combination of more than one type of help.

College Work-Study

Students earn \$1.75 per hour or better while working 10 hours a week when classes are in session. During vacation periods, worktime may be increased to 40 hours per week.

College Work-Study is particularly well-suited to the student who needs extra income to stay in school but feels a full-time, outside job might jeopardize his studies. Hours can usually be arranged to follow the student's class schedule.

Educational Opportunity Grants (EOG)

Educational Opportunity Grants are outright awards which do not have to be repaid. They are given to students of limited financial resources who would be unable to attend college without such help. Grants range from \$200 to \$1,000 per year. EOG recipients must match the amount of the grant with a scholarship.

Nursing Student Loan Program

Nursing students are eligible for Nursing Student Loans which enable them to borrow up to \$1,500 per year to finance their training. Terms for Nursing Loans are the same as for the National Defense Student Loans.

National Defense Student Loans

Through National Defense Student Loans, a student may borrow up to \$1,000 in one year. Loans accumulate no interest while the student remains in college or continues his studies at another institution. Repayment begins nine months after the completion of the student's formal education. Loans are repaid over an extended period with a simple 3 percent interest rate. No payments are made when the borrower is in the military. National Defense Student Loans also have payment cancellation clauses for recipients who become teachers in eligible institutions.

Nursing Scholarship Program

This program has been developed to assist students of exceptional financial need to attain a career in nursing. There is no matching fund requirement under the Nursing Scholarship Program. However, Nursing Scholarships are usually combined with Nursing Student Loans to provide a financial package to meet a student's individual need.

Board of Higher Education Scholarship Program

The Commonwealth of Massachusetts sponsors an excellent scholarship program for full-time students who are residents of the State. Applications may be obtained at any secondary school guidance office or by writing to the Scholarship Office, Board of Higher Education, Commonwealth of Massachusetts, 182 Tremont Street, Boston, Massachusetts 02111.

Private Organization Scholarships

Several scholarships awarded by private organizations in Greater Springfield are also available. Requests for information should be directed to the Financial Aid Office, STCC.

H. E. L. P. Loans

The Massachusetts Higher Education Loan Assistance Corporation guarantees student loans up to \$1,500 per year. Called HELP Loans, repayment begins after the student has completed his formal education. Such loans are obtained from Massachusetts banks which can provide complete details about terms.

LEEP Program

Eligible students enrolled in Law Enforcement courses may receive assistance through the Law Enforcement Education Program (LEEP). LEEP is supported by federal funds and administered by the U.S. Department of Justice.

Application Procedure

Springfield Technical Community College is affiliated with the College Scholarship Service (CSS). This organization's forms are used to provide the College with data which are evaluated by the Financial Aid Officer when he determines a student's need.

Students being supported by their parents should obtain a copy of the Parents' Confidential Statement (PCS) from their high school guidance counselor or the Financial Aid Office of the College.

Married students and others not receiving financial support from their parents (and whose parents do not deduct them on their income tax) should use the Student's Financial Statement (SFS) available at the College.

The PCS or SFS should be mailed to the address indicated on these forms. List Springfield Technical Community College under Item No. 2 (PCS); under Item No. 16 (SFS).

In addition to the PCS or SFS, each applicant must also complete a separate Springfield Technical Community College Financial Aid Application obtained by writing to the Financial Aid Office of the College.

It should be noted that financial assistance received in any one year does not automatically guarantee aid in a subsequent year. A new application must be submitted each year.

The deadline date for filing the above forms is **April 15**. Applications received after this date may not receive consideration.



A PREVIEW OF OUR NEW CAMPUS

GENERAL INFORMATION

Created by an act of the State Legislature, the Massachusetts Board of Regional Community Colleges is one of several separate governing bodies of the Commonwealth's system of Higher Education. Members of the Board are appointed by the governor for a term of six years. The Board has a major responsibility for planning, making policies, and appointing all personnel for the entire fourteen member community college system. Members of the Board reflect involvement in the various professions, business and industries, as well as other segments of the state's system of higher education. Because of their backgrounds, they are in an ideal position to insure that the community colleges continue in the mainstream of public higher education and that they contribute to a totally comprehensive system for the Commonwealth.

STCC Advisory Board

The Advisory Board consists of ten members as provided by Section 38, Chapter 737, Acts of 1964, General Laws of the Commonwealth of Massachusetts. Members are appointed by the Governor for a term of five years for the purpose of advising the President in all phases of his direction of the College; particularly, in relation to those programs which give the College a degree of uniqueness. Of the ten, one must represent labor and another business and industry.

Program Advisory Committees

Springfield Technical Community College takes very seriously the role that advisory committees can play in the establishment and progress of career programs. Since such programs are designed to prepare students to obtain employment in rapidly changing business, industrial, and professional environments, it is essential that the college have communications with knowledgeable leaders and employers of the local community. Advisory boards generally assist the college in three ways:

1. By serving as a communication channel between the college, its educational program, and the employing institutions, leaders, and interest groups.

2. By helping the college and its professional staff identify the specific skills, knowledge, understandings, and experiences that must be included in the curriculum to assure student employment and job success.

3. By providing feedback evaluation as to the performance strengths and weaknesses of graduates of the program and by helping to analyze and improve curriculum and instructional designs.

The College appoints specific advisory committees for most career programs, as well as general advisory committees for groupings of career programs (such as health careers). There is also an overall Technical Occupational Advisory Committee to help assure a balanced offering of programs that will meet the varied needs of different kinds of students and, simultaneously, meet the employment imperatives of all segments of the business and professional community.

Alumni Association

All graduates and all former students who have earned at least 30 hours of credit at Springfield Technical Community College are members of the Alumni Association. Its objectives are: to aid in advancing the growth and development of STCC through individual and group endeavor; to promote beneficial relationships among alumni, students, and the College; and to encourage continued academic, extracurricular and career achievements by the undergraduates and members of the Association.

The Association is supervised by an elected governing body which plans programs to hold the interest and support of able men and women who will help the College attain its objectives. Alumni are kept informed about the College's academic, cultural, and

athletic programs and take an active part in alerting worthy talented students to the educational opportunities at STCC.

All questions pertaining to alumni affairs should be addressed to:

Secretary, STCC Alumni Association
Springfield Technical Community College
One Armory Square
Springfield, Massachusetts 01105

Placement Services

Springfield Technical Community College maintains a centralized placement service which is part of the student personnel program. Its services include educational placement and employment placement.

The Placement Office is located in the Counseling Center. The specific functions of the office are to maintain a current record of employment opportunities, to establish and maintain permanent credential records of STCC students and alumni, and to conduct follow-up studies of graduates.

The placement service seeks to assist students and alumni in attaining positions which will best utilize their education, training, experience and abilities.

Counseling

A staff of professional counselors exists to give special attention to the College's high regard for human worth, dignity, and individuality. While counselors offer a helping relationship to all students who need assistance in meeting individual human needs, they also strive to actualize both their own and the College's full potential for facilitating human development.

Career, educational, and personal counseling is provided by the Counseling Center. A student may call upon this College agency to explore life and occupational goals, obtain educational-occupational information, clarify human values,

enhance personal strengths, attach individual "roadblocks" to self-development, or simply encounter another human being who feels deeply for his fellowman and who is keenly interested in helping people help themselves. Specialized testing is available to any student in need of objective information concerning abilities, achievements, interests, and personality attributes. All students and interested parents are encouraged to request assistance from the Counseling Staff at any time.

Health, Safety and First Aid

The College promotes and maintains conditions which encourage and assist students in realizing optimum physical and emotional well-being. The proximity to numerous Springfield City hospitals and health clinics affords the College a unique opportunity in its efforts to provide instant first-aid assistance to its students.

The College Nurse is located in the Allied Health Services Building, Ext. 46. She will provide first aid and is also available for consultation with any student regarding health problems.

A Medical Doctor is also on call. In the event of injury or illness, he can be reached by contacting the College Nurse, Ext. 46. In the event no one can be reached, contact the Emergency Room of the Wesson Memorial Hospital.

"Ombudsman"

A new addition to the College is an "Ombudsman" (Grievance Man) who will act as a consultant to the students, thus providing an open line of communication between students and the administration. His office is located at the entrance of Building 20.

Tutorial Assistance for Student Course Improvement

The College has instituted a highly successful program (TASCI) for individual student assistance in several areas of study. This program is free of charge to evening as well as all day students.

The program utilizes students who are proficient in a particular subject area to tutor students who have problems in that field.

It offers assistance to students:

1. Who are having general difficulty with a particular subject
2. Who have fallen behind in their class
3. Who have a specific problem in a subject area

By establishing a schedule whereby a student can receive help, either by appointment or on a continuous basis and by making the tutors available in a specific area during a specific time period, the student will have no problem receiving the assistance he requires. Professors and counselors are also available to coordinate students with respective tutors and aid in whatever way possible to insure the highest quality education.

Should any student need tutorial assistance he should simply contact:

TASCI Program Director
Springfield Technical Community College
Administration Building
Office 209B
Telephone 781-6470, Ext. 86

Veterans' Benefits

Springfield Technical Community College complies with all regulations established by the Veterans' Administration for students enrolled under VA programs, as required in Chapter 33, Title 38, United States Code, Section 1776. Students eligible for assistance under the GI Bill or other VA programs should apply directly to the nearest VA office.

In order to be eligible for the full monthly allowance from the government under any of the above laws, a student must be enrolled for twelve or more credit hours of work. Those enrolled for less than

twelve credit hours will be eligible for partial compensation.

All students who wish to obtain educational benefits under these laws must register with the Office of the Registrar at the time of registration in the College.

Veterans' registration must be renewed at the beginning of each subsequent semester and/or Summer Session.

PREP Program

The Predischarge Education Program is offered by STCC at Westover Air Force Base. This program is designed to help servicemen who lack a high school diploma or who have educational deficiencies to continue their education and prepare themselves for higher education or vocational training.

The PREP Program is intended to bridge the gap between high school and college for those servicemen who have ability but because of previous education, family income, inadequate counseling, or other reasons, may not plan to continue their education.

Servicemen who participate in this program will still have their full and complete earned entitlement to regular educational assistance allowance upon completion of their service obligation.

Up to \$175.00 per man per month will be paid by the Veterans' Administration to the serviceman for tuition, fees, books, and supplies. Servicemen with 181 days of active duty are eligible.

STCC Foundation

One of the most recent additions to the College was the creation of the STCC Foundation, an organization which will provide an opportunity for interested citizens to make a significant contribution to the welfare of the College and particularly to the students. The Foundation will make possible scholarship grants, additional space, specialized counseling services, faculty improvement, additional resources for the library, and such other services or facilities for which the state appropriations are either not

applicable or are minimal in terms of the needs of the College.

The demonstrated interest of people in business and industry, in the professions, or who are just interested citizens emphasizes the genuine concern and support for the kind of education found in Community Colleges and for the students who attend those institutions.

Hospital Affiliation

In addition to the formal classroom and laboratory experience given at the Springfield Technical Community College, each student in the Division of Health Technologies and Community Services is provided an opportunity for supervised clinical experience planned in cooperation with 36 affiliating agencies.

Following a period of pre-clinical academic studies, it is felt that technical skills can best be identified within a clinical environment. Herein the student learns the complexity of the total health program and has an opportunity to develop job competencies under the supervision of assigned professional personnel. Thus we may develop a more realistic approach to the importance of the supportive worker's place on the Health team.

Library Services

The College library adheres to the theory that both printed work and audio-visual materials are essential to a student's study experience. There is a growing collection of records, microfilm, microfiche, tapes and films. These, combined with the 30,000 printed volumes, give each student maximum opportunity for study and research. Study areas are arranged for individual study, small group discussions and seminars. Students and faculty assist the librarian in selecting library materials and setting library policies.

The library's reference collection, which has closely followed the growth of the College's curricula, presently includes carefully selected reference books, periodical subscriptions, indexing services and a vertical file.



The objectives of the Library are to provide a rich, functional, up-to-date collection of books, periodicals, recordings, and related educational materials for inspired teaching; to help provide materials and atmosphere conducive to strong intellectual stimulation to both faculty and students; to assist in strengthening the teaching program in all aspects; and to provide materials that are both timely and lasting.

College Bookstore

The Bookstore is located on the First Floor, South Wing of Building 20. It will be opened daily and evenings whenever classes are in session. The hourly schedule will be posted at the beginning of the fall semester.

Students will be able to purchase textbooks, school supplies, and equipment needs for course work. Miscellaneous items with school insignias, such as sweatshirts, jackets and stationery, will also be available.

On-Campus Television Broadcasting Station

The commencement of broadcasting this year by WGBY, the public broadcasting station located on STCC grounds, has brought the benefits of educational television to the campus as well as the surrounding community. A major contribution has thereby been made to the cultural life of Greater Springfield.

Because the station is located on the campus of STCC, a new dimension has been added to the educational services of WGBY; that is, a course which has given students the opportunity to write, produce, direct, and evaluate television productions. This outstanding feature of the television station, which has been provided through the efforts of both the station and STCC, has enabled students to pursue a career in this type of mass media program.

The operation of the television station has afforded STCC students the opportunity to be of unusual service to both the campus and the community. Perhaps the major impact of the station will be its long-range effects in assisting students to become more deeply involved in community affairs.



COURSES OF STUDY

TRANSFER PROGRAMS

The transfer curricula are designed for students who plan to transfer with full credit to a senior college or university after completion of one or two years at the College. The courses offered in these curricula are generally those required to provide a broad educational background before beginning specialization in a major field of study. A high quality of academic achievement, revealing seriousness of purpose and sound habits of study, is the most important qualification for successful transfer.

Four transfer programs are offered at Springfield Technical Community College:

1. Business Administration
2. Engineering Science
3. General Studies
4. Liberal Arts and Sciences

ACADEMIC PROGRAMS

In an attempt to provide the most comprehensive variety of educational experiences and match these with the specific needs of the individual student, the College offers 42 academic programs. In the main, these fall into four categories: College transfer programs, career programs, cooperative education program, and student development.

CAREER PROGRAMS

The College offers 34 career programs structured specifically to meet the educational needs of students and the job market needs of the region. These programs are planned in such a way that graduates from them can enter the field of their choice on a level suitable for a highly trained technician.

COOPERATIVE EDUCATION PROGRAM

Cooperative Education is a program which enables students to alternate periods of academic study with periods of full-time, off-campus employment. Via this plan, participants can make unusual career achievements while still in college—achievements which frequently translate into meaningful jobs upon graduation. In a few courses, a Co-op program can be integrated into the regular two-year schedule. In most it extends the actual time spent in college by an additional semester or a semester plus summer work. Students recognize that this additional time is well spent since in addition to eliminating the problem of the new graduate being turned down when applying for his first job because he has had no “paid experience,” the Co-op assignment offers earnings which defray their personal expenses and the cost of their education. The Cooperative Plan also develops employment contacts which are valuable in later placement. For many it provides a head start in salary and position in after-graduation employment. Upon completion of the Co-op Program the student receives a special Cooperative Education certificate in addition to an Associate Degree diploma.

STUDENT DEVELOPMENT PROGRAM

The objective of the Student Development Department is to aid the incoming students in acquiring the knowledge, skills, and study habits requisite for satisfactory performance in other college programs. It is primarily designed for those students who did not take a college preparatory course in high school, or have been out of school for some time, or have a High School Equivalency Certificate and wish to review some basic fundamentals. The length of time that a student will spend in this curriculum varies from one to two semesters and depends totally on the student's ability and performance. In order to make the program more effective and accelerate the learning process, the rigidized approach of lecture and laboratory is either minimized or dropped in favor of newer and more programmed instructional materials, integrated lecture and laboratory periods, and the use of student tutors. An extremely

important aspect of the curriculum is that each student has a program tailored to fit both his current and future needs. This program usually consists of math, science, and English courses as well as several courses relating to his future major.



Commencement Exercises '72



CURRICULA OF THE COLLEGE

UNIVERSITY PARALLEL PROGRAMS: Associate Degree

Business Administration
Engineering Science
General Studies
Liberal Arts and Sciences

CAREER PROGRAMS

BUSINESS: Associate Degree

Business Administration
Executive Secretarial
Legal Secretarial
Medical Secretarial

ENGINEERING TECHNOLOGY: Associate Degree

Automotive Technology
Bio-Medical Instrumentation Technology
Civil Engineering Technology
Data Processing Technology
Electrical Technology
Electronics Technology
Environmental Technology
Graphic Arts Technology
Heating and Power Technology
Landscape Technology
Machine and Tool Design Technology
Mechanical Technology
*** Nuclear Technology

ALLIED HEALTH SCIENCES: Associate Degree

* Dental Assistant
Dental Hygienist
*** Medical Assistant
* Medical Laboratory Assistant (CLA)
Medical Laboratory Technician (MLT)
Mental Health Technician
Nursing
* Operating Room Technician
Physical Therapy Assistant
Radiologic Technology
Respiratory Therapy Technician

SERVICE TECHNOLOGIES

* Cosmetology
Early Childhood Assistant
** Fire Science
Law Enforcement
** Public Administration
Telecommunications Technology

* 1-year Certificate Program

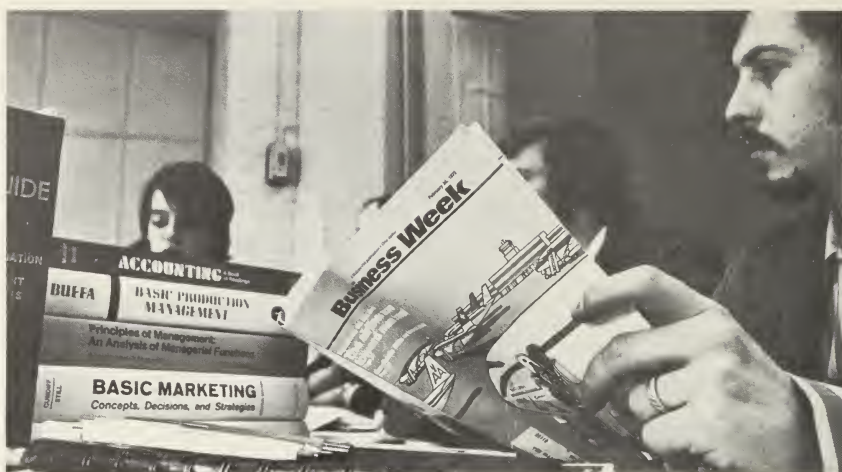
** Offered only through the Division of Continuing Education

*** 1974

**** Offered as a 1-year Certificate Program and/or a 2-year Associate Degree

Transfer Programs

- Business Administration
- Engineering Science
 - General Studies
 - Liberal Arts and Sciences



BUSINESS ADMINISTRATION TRANSFER PROGRAM

Education, in business, prepares the student vocationally and aids in the development of the socio-economic attitudes which are essential in establishing the future success of American youth in our free enterprise system. It offers a knowledge and understanding of business and business methods, a competency in related skills, and the development of character and personality that will help the student cope more effectively with our changing economy.

The basic philosophy of the department is to educate and train each student for transfer to a four-year college or university upon the completion of his academic work at STCC. Senior colleges and universities, in addition to general education, vary the nature and number of professional course requirements which should be taken during the freshman and sophomore years. In planning his program with his advisor, a student who has determined which business profession he plans to enter should study the catalog of the institution to which he plans to transfer.

In developing students for mid-management positions, the department encourages the cooperation of the varied business enterprises of the greater Springfield area. Guest lecturers from industry provide classes with the practical view, supplementing that of the theoretical to provide the student with the necessary educational thrust and stimuli required in the expanding field of business.

BUSINESS ADMINISTRATION TRANSFER PROGRAM

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
	Math Elective	3		6	9	3
5023	Accounting 1	4		8	12	4
5050	Principles of Management	3		6	9	3
6008	Intro. to Data Processing	3		6	9	3
		16		32	48	16

Semester 2

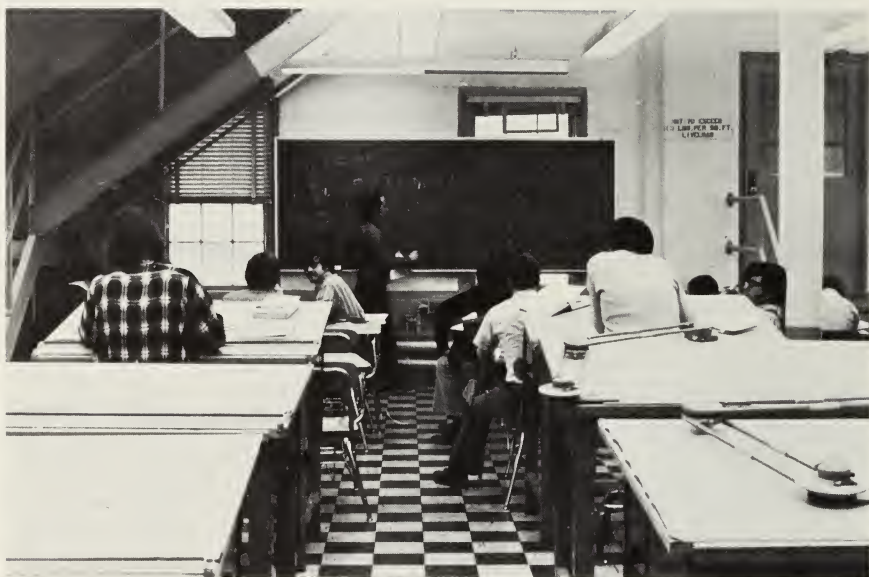
No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
	Statistics Elective	3		6	9	3
5024	Accounting 2	4		8	12	4
4086	General Psychology	3		6	9	3
6202	D. P. Systems & Procedures	3		6	9	3
		16		32	48	16

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
4014	Economics 1	3		6	9	3
5048	Business Law 1	3		6	9	3
	Major Elective	3		6	9	3
	Major Elective	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
4015	Economics 2	3		6	9	3
5049	Business Law 2	3		6	9	3
	Major Elective	3		6	9	3
	Major Elective	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15



ENGINEERING TECHNOLOGY CORE CURRICULUM

For the benefit of the student entering at midyear, for the student who has not decided on his technology when he enters STCC and for the student who wants engineering technology but does not want to specialize, STCC offers a core curriculum in Engineering Technology. Students can normally transfer into any of the engineering technologies after one semester in the core curriculum. Students who complete the entire core curriculum receive the Associate in Science Degree in General Engineering Technology.

ENGINEERING TECHNOLOGY CORE CURRICULUM

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
	Mathematics 2331,32,33	3		6	9	3
2334	Slide Rule Math	3		6	9	1
3002	Chemistry 1	3	3	6	12	4
624-	Prog. Engineering Graphics Mod. -		3		3	1
6230	Survey of Engineering Technologies	3		6	9	3
6019	Basic Electronics 1	5		10	15	5
		17	6	34	57	17

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
	Elective (Humanities)	3		6	9	3
	Mathematics 2341, 42, 43, 44	3		6	9	4
3012	Physics 1		6	6	12	4
6024	Basic Electronics 2	5		10	15	5
624-	Prog. Engineering Graphics Mod. -		3		3	1
625-	Machine Shop Tech. Mod. -		6		6	1
		11	15	28	54	18

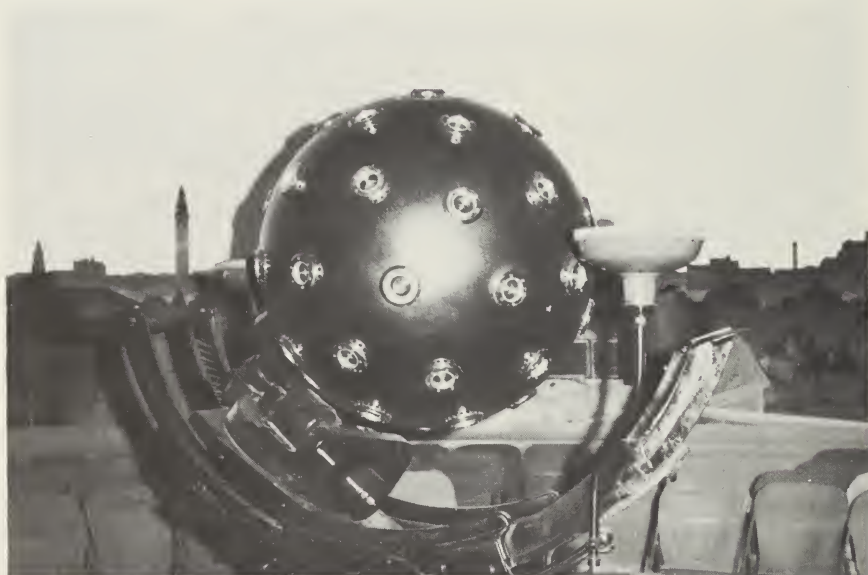
Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
	Elective (Humanities)	3		6	9	3
	Elective (Social Science)	3		6	9	3
3013	Physics 2	3	3	6	12	4
2015	Statistics & Quality Control	3		6	9	3
6150	Fluid Power	3		6	9	3
		15	3	30	48	16

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
6232	Fortran for Scientists & Engineers	3		6	9	3
6224	Engineering Measurements & Analysis	1	4	2	7	3
	Elective (Social Science)	3		6	9	3
	Electives (Technical)	5	5	10	20	6
		12	9	24	45	15

ENGINEERING SCIENCE TRANSFER PROGRAM



STCC offers a diversified program for students planning to major in engineering or science. A basic core in science and mathematics is supplemented by second year engineering courses in the principal engineering disciplines. Strong biology and chemistry programs give students planning to continue in these fields as well as pre-medical and pre-dental students an opportunity to complete their first two years at STCC.

CURRICULUM FOR THE ASSOCIATE IN SCIENCE DEGREE IN ENGINEERING SCIENCE

** Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credit
	Elective (Social Science)	3		6	9	3
	* Mathematics 2350, 51, 52, 53	4		8	12	4
3005	* General Chemistry 21	3	3	6	12	4
2334	Slide Rule Math	3		6	9	3
6154	* Engineering Seminar 21	3	3	6	12	4
6241	Prog. Engineering Graphics Mod. 1		3		3	1
		16	9	32	57	17

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
	Elective (Social Science)	3		6	9	3
	* Mathematics 2354, 55, 56, 57	4		8	12	4
3015	* Physics 21	4	3	8	15	5
3006	* General Chemistry 22	3	3	6	12	4
		14	6	28	48	16

** Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
	Humanities Elective	3		6	9	3
	* Mathematics 2358, 59, 60, 61	4		8	12	4
3016	* Physics 22	4	3	8	15	5
6224	* Eng. Measurement & Analysis	1	4	2	7	3
	Elective	3		6	9	3
		15	7	30	52	18

Semester 4

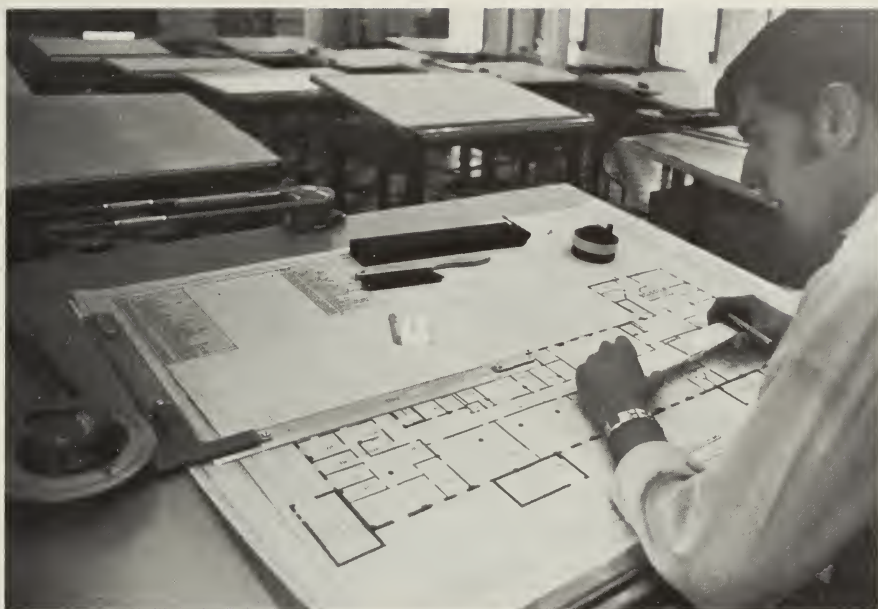
No.	Course Title	Class	Lab	Prep	Units	Credits
	Elective (Humanities)	3		6	9	3
	Mathematics 2362, 63, 64, 65	4		8	12	4
3017	Physics 23	4	3	8	15	5
	Electives	3		6	9	3
		14	3	28	45	15

*Required for graduation

**First year students planning to major in biology, oceanography, pre-medical or pre-dental, substitute Biology 3080 and 3081 for Engineering Seminar 21 and Physics 21. Prospective chemistry majors take Organic Chemistry and Quantitative Analysis their second year.

TRANSFERABLE ENGINEERING ELECTIVES:

6232	Fortran	6219	Systems Analysis 1
6092	Surveying	6220	Systems Analysis 2
6241-6249	Engineering Graphics	6224	Eng. Measurements & Analysis
6221	Material Sciences	6227	Thermodynamics
6217	Mechanics 1		
6218	Mechanics 2		



ENGINEERING TECHNOLOGY TRANSFER PROGRAM

This curriculum is offered for students wishing to transfer into institutions offering a four-year degree in Engineering Technology. Graduates of STCC's other engineering technologies may also transfer into four-year engineering technology programs but, depending on the institution, they may find it necessary to take additional freshman and sophomore mathematics and science courses. To avoid this difficulty engineering technology students who think they may eventually transfer to a four-year institution are advised to substitute the science and mathematics courses listed in the Engineering Technology Transfer Program for the engineering and science courses in their own program. For convenience the courses which should be substituted are starred in the accompanying curriculum outline.

ENGINEERING TECHNOLOGY TRANSFER PROGRAM

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
	Mathematics 2331,32,33	3		6	9	3
2334	Slide Rule Math	3		6	9	1
3086	Chemistry 11	3	3	6	12	4
6154	Engineering Seminar 21	3	3	6	12	4
6241	Prog. Engineering Graphics Mod. 1		3		3	1
6242	Prog. Engineering Graphics Mod. 2		3		3	1
	Elective (Social Science)	3		6	9	3
		15	12	30	57	17

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
	Mathematics 2341,42,43,44	3		6	9	4
2082	Analytic Geometry & Calculus 1	3		6	9	3
3031	Physics 11	3	3	6	12	4
3087	Chemistry 12	3	3	6	12	4
	Elective (Humanities)	3		6	9	3
		15	6	30	51	18

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
2083	Analytic Geometry & Calculus 2	3		6	9	3
3032	Physics 12	3	3	6	12	4
6217	Mechanics 1	3		6	9	3
	Elective (Humanities)	3		6	9	3
	Elective (Engineering)	3		6	9	3
		15	3	30	48	16

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
2088	Calculus 3	3		6	9	3
6218	Mechanics 2	3		6	9	3
6224	Engineering Measurements & Analysis	1	4	2	7	3
	Elective (Humanities)	3		6	9	3
	Elective (Engineering)	3		6	9	3
		13	4	26	43	15

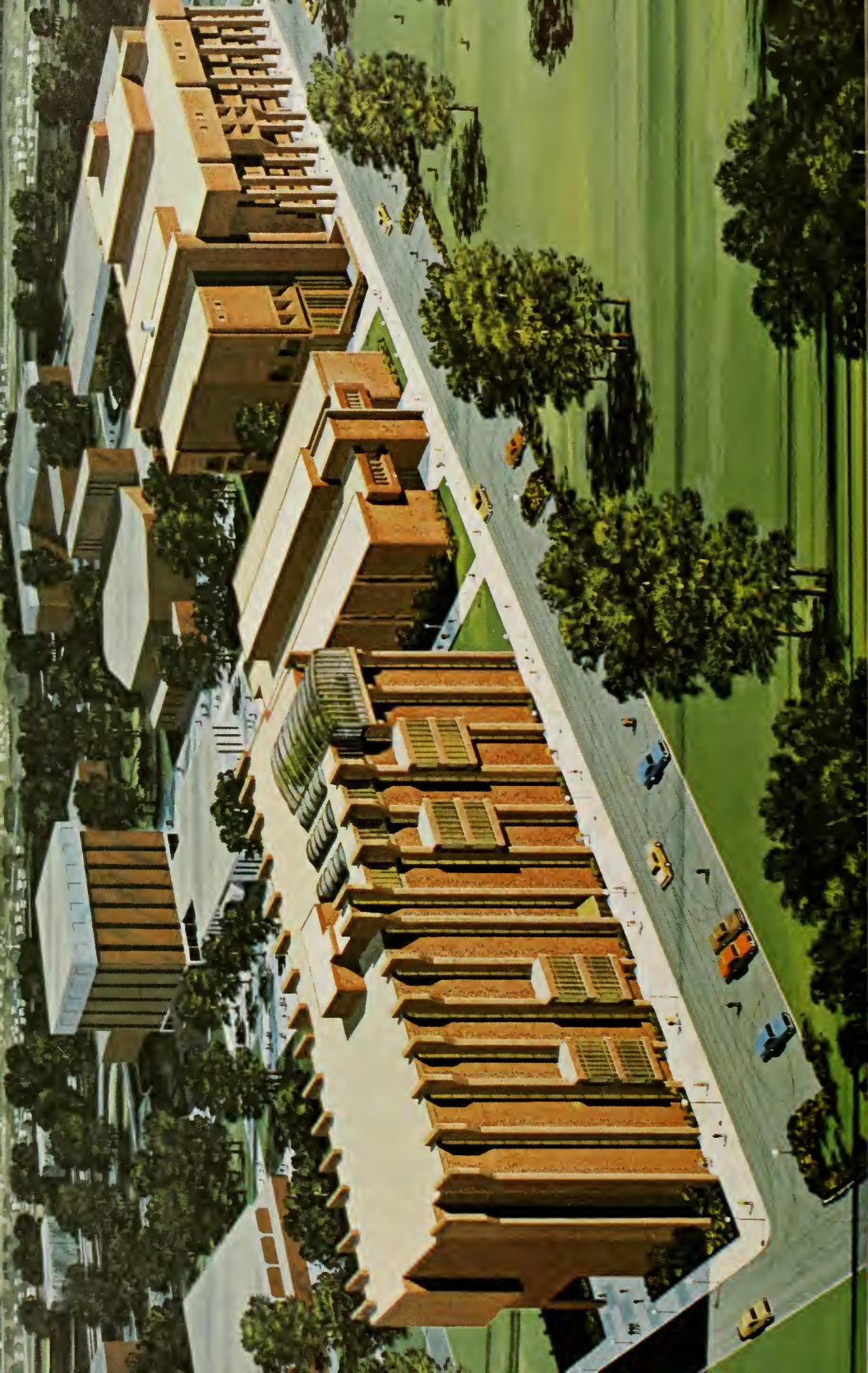


GENERAL STUDIES

The General Studies program is designed for those students who desire a general education background, or for those who have not as yet crystallized their career plans. Students who subsequently change or define their educational objectives may petition for admission into a transfer or career program or more, following the successful completion of one semester's work at the college.

Through the General Studies program, the student who is initially undecided about his career objectives is provided with an exploratory period which leads to either a transfer program in the sophomore year or to an occupational curriculum. Potential transfer students enrolled in this program also have an opportunity to remove high school college preparatory course inadequacies in order that transfer to a senior college might be more easily effected.

The General Studies program includes the student in a broad range of subjects from three academic areas: Social Sciences, Humanities and Mathematics, and Natural Sciences. The student is also strongly encouraged to explore occupational courses through electives in such areas as Business Technology, Data Processing, Engineering Technology, Secretarial Studies, Health, and other career programs. (Successful completion of the regular two-year general studies curriculum leads to an Associate in Arts degree in General Studies).





CURRICULUM FOR THE ASSOCIATE IN ARTS DEGREE IN GENERAL STUDIES

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
4012	Western Civilization 1	3		6	9	3
	Humanities or Soc. Sci. Elective	3		6	9	3
4008	Introduction to Sociology 1	3		6	9	3
1007	Fundamentals of Speech	3		6	9	3
		15		30	45	15

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
4013	Western Civilization 2	3		6	9	3
	Elective	3		6	9	3
	Elective	3		6	9	3
4086	General Psychology	3		6	9	3
		15		30	45	15

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
	Literature Elective	3		6	9	3
	Career Elective	3		6	9	3
	General Elective	3		6	9	3
	General Elective	3		6	9	3
	Science or Math	3	3	6	12	4
		15	3	30	48	16

Semester 4

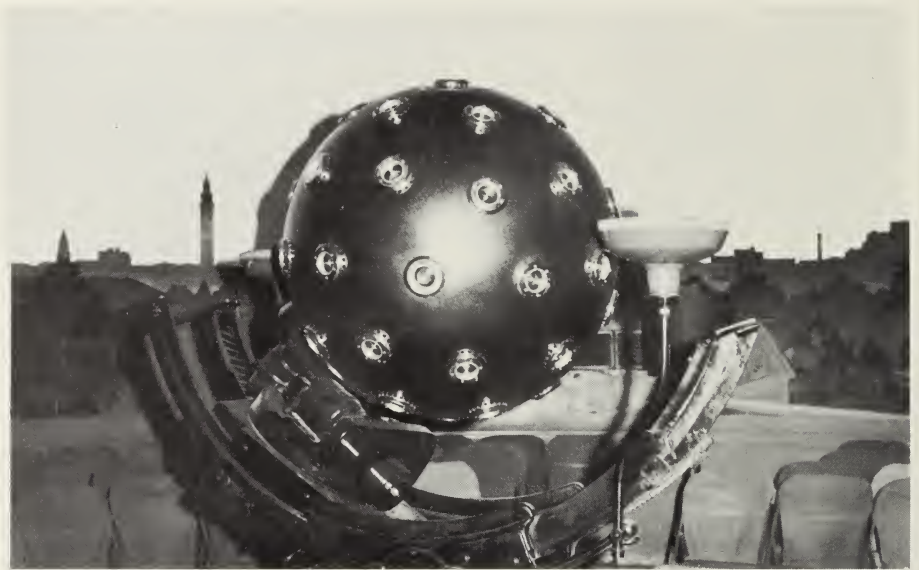
No.	Course Title	Class	Lab	Prep	Units	Credits
	Literature Elective	3		6	9	3
	Science or Math	3	3	6	12	4
	Career Elective	3		6	9	3
	General Elective	3		6	9	3
	General Elective	3		6	9	3
		15	3	30	48	16

The General Studies curriculum is designed to allow a great deal of flexibility in the selection of courses. The core of courses enumerated below are required for graduation:

Fundamentals of Speech	3 credits
English Composition 1 & 2	6 credits
Literature or Social Sciences	6 credits
Career Electives (2 courses)	6 credits
Science or Math (2 courses) Science may be 3 or 4 credits, but must be different from high school courses — note — Math may be substituted)	6 or 8 credits
Fine Arts or Music	3 credits
Western Civilization	<u>6 credits</u>
TOTAL	36 credits

The remaining electives may include courses in the humanities, foreign languages, fine arts, technologies, business, health, sciences, math, or social sciences. Most of the courses in the divisions of the College are transferable to other collegiate institutions.





SEYMOUR PLANETARIUM — MUSEUM OF SCIENCE



TAPESTRY COURT — FINE ARTS MUSEUM

Springfield Museums

AFFILIATED WITH SPRINGFIELD
TECHNICAL COMMUNITY COLLEGE



MUSEUM OF SCIENCE



MUSEUM OF FINE ARTS

GEORGE WALTER VINCENT SMITH
ART MUSEUM





CURRICULUM FOR THE ASSOCIATE IN ARTS DEGREE IN LIBERAL ARTS TRANSFER

The above curriculum is designed primarily for students who intend to transfer to a senior institution and work toward a Bachelor's degree. The minimum requirements for the Associate in Arts degree are 62 semester hours, including a required core of 15 credits in the Humanities, 15 in the Social Sciences, and 14 credits in Mathematics, Natural and/or Social Sciences. Some general items are noted below which should be kept in mind.

Foreign Language: Although most Bachelor of Arts programs still require at least two years (through the intermediate level) of a modern foreign language, this requirement is changing very rapidly and is no longer required at some institutions. Be sure to check the college(s) of your choice for the details regarding this requirement.

Literature: Colleges vary with respect to this area, and each student should check the catalog of the college(s) of his choice for the specific requirements.

Prospective biology, chemistry, mathematics, pre-medical and pre-dental majors should enter the Engineering Science Transfer Program.

CURRICULUM FOR THE ASSOCIATE IN ARTS DEGREE IN LIBERAL ARTS TRANSFER

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
4012	Western Civilization 1 or Hist. Elective	3		6	9	3
	Foreign Language, Hum, Math, Nat or Soc Science Elective	3		6	9	3
2080	Finite Math 1 or Lab Science	3		6	9	3
1007	Fundamentals of Speech	3		6	9	3
		15		30	45	15

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
4013	Western Civilization 2 or Hist. Elective	3		6	9	3
	Foreign Language, Hum, Math, Nat or Soc Science Elective	3		6	9	3
4008	Introduction to Sociology 1	3		6	9	3
2081	Finite Math 2 or Lab Science	3		6	9	3
		15		30	45	15

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
	Literature Elective	3		6	9	3
	Laboratory Science	3	3	6	12	4
	Foreign Language (Interm.), Hum, Math, Nat or Soc Science Elective	3		6	9	3
4086	General Psychology	3		6	9	3
	Hum, Math, Nat or Soc Science Elective	3		6	9	3
		15	3	30	48	16

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
	Literature Elective	3		6	9	3
	Laboratory Science	3	3	6	12	4
	Foreign Language (Interm.), Hum, Math, Nat or Soc Science Elective	3		6	9	3
	Hum, Math, Nat or Soc Science Elective	3		6	9	3
	Hum, Math, Nat or Soc Science Elective	3		6	9	3
		15	3	30	48	16



CAREER PROGRAMS

Career curricula are designed for students who desire to complete a program of college education in two years and have decided to enter one of the many semiprofessional careers now available in engineering technology, medical health services, and business management for which two years of college education provide sufficient preparation. Career programs serve a two-fold purpose: They offer a general education to provide a student with a better understanding of the world in which he lives and specific preparation for a particular occupation. Students pursuing a career would probably be involved in a subsequent transfer to a senior college or university.

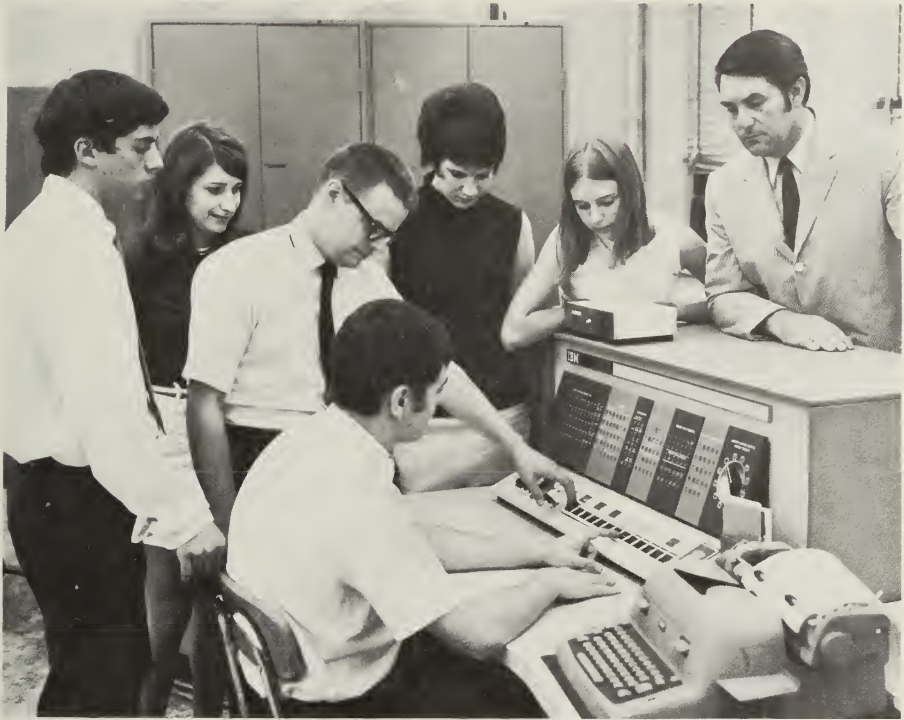
The college hopefully heeds the words of Alfred North Whitehead:

" . . . culture is activity of thought, and receptiveness to beauty and human feelings. Scraps of information have nothing to do with it. A merely well-informed man is the most useless bore on God's earth. What we should aim at producing is men who possess both culture and expert knowledge in some special direction. Their expert knowledge will give them the ground to start from, and their culture will lead them as deep as philosophy and as high as art."

Business

- Business Administration
 - Executive Secretarial
 - Legal Secretarial
 - Medical Secretarial

BUSINESS ADMINISTRATION



ACCOUNTING, FINANCE, MANAGEMENT, MARKETING

The basic philosophy underlying this program is to develop competent business personnel for immediate career opportunities. Students may pursue a program in one of the four major areas of concentration leading to an Associate of Science Degree in Accounting, Finance, Management, or Marketing.

BUSINESS ADMINISTRATION

Accounting

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
	Math Elective	3		6	9	3
5023	Accounting 1	4		8	12	4
5050	Principles of Management	3		6	9	3
6008	Intro. to Data Processing	3		6	9	3
		16		32	48	16

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
	Statistics Elective	3		6	9	3
5024	Accounting 2	4		8	12	4
4086	General Psychology	3		6	9	3
6202	D. P. Systems & Procedures	3		6	9	3
		16		32	48	16

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
4014	Economics 1	3		6	9	3
5026	Cost Accounting	3		6	9	3
5040	Intermediate Accounting 1	3		6	9	3
5048	Business Law 1	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
4015	Economics 2	3		6	9	3
5041	Intermediate Accounting 2	3		6	9	3
5044	Corporation Finance	3		6	9	3
5049	Business Law 2	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

BUSINESS ADMINISTRATION

Finance

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
	Math Elective	3		6	9	3
5023	Accounting 1	4		8	12	4
5050	Principles of Management	3		6	9	3
6008	Intro. to Data Processing	3		6	9	3
		16		32	48	16

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
	Statistics Elective	3		6	9	3
5024	Accounting 2	4		8	12	4
4086	General Psychology	3		6	9	3
6202	D. P. Systems & Procedures	3		6	9	3
		16		32	48	16

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
4014	Economics 1	3		6	9	3
5046	Money & Banking	3		6	9	3
5047	Financial Statement Analysis	3		6	9	3
5048	Business Law 1	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
4015	Economics 2	3		6	9	3
5044	Corporation Finance	3		6	9	3
5045	Credits & Collections	3		6	9	3
5049	Business Law 2	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

BUSINESS ADMINISTRATION

Management

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
	Math Elective	3		6	9	3
5023	Accounting 1	4		8	12	4
5050	Principles of Management	3		6	9	3
6008	Intro. to Data Processing	3		6	9	3
		16		32	48	16

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
5060	Business Statistics	3		6	9	3
5024	Accounting 2	4		8	12	4
4086	General Psychology	3		6	9	3
6202	D. P. Systems & Procedures	3		6	9	3
		16		32	48	16

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
4014	Economics 1	3		6	9	3
5048	Business Law 1	3		6	9	3
5054	Production Management	3		6	9	3
5052	Personnel Management	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
4015	Economics 2	3		6	9	3
5049	Business Law 2	3		6	9	3
5053	Industrial Relations	3		6	9	3
5051	Business Policies	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

BUSINESS ADMINISTRATION

Marketing

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
	Math Elective	3		6	9	3
5023	Accounting 1	4		8	12	4
5050	Principles of Management	3		6	9	3
6008	Intro. to Data Processing	3		6	9	3
		16		32	48	16

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
	Statistics Elective	3		6	9	3
5024	Accounting 2	4		8	12	4
4086	General Psychology	3		6	9	3
6202	D. P. Systems & Procedures	3		6	9	3
		16		32	48	16

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
4014	Economics 1	3		6	9	3
5048	Business Law 1	3		6	9	3
5055	Logistics	3		6	9	3
5059	Marketing Procedures	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
4015	Economics 2	3		6	9	3
5049	Business Law 2	3		6	9	3
5056	Marketing Management	3		6	9	3
5057	Marketing Research	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

SECRETARIAL SCIENCE



The aim of the Secretarial Science two-year Associate Degree curricula is to prepare students to assume greater responsibility in a secretarial career than is required in a stenographic career, which depends largely on the basic skills of typewriting and shorthand. The role of the secretary has changed and so has the training she needs in order to do her job successfully. In addition to a high degree of competency in shorthand and typing, the secretary needs a broader knowledge of communications, economics, psychology, sociology, business law, data processing, and accounting.

The well-trained executive secretary has a wide range of opportunities open to her in such areas as advertising, all of the arts, finance, education, government, foreign service, and many others. The medical secretary is not only competent in secretarial skills, but she must have a wide range of medical knowledge. She is prepared to work in doctors' offices, medical centers, and other medical institutions. The legal secretary specializes in legal terminology, business law, and accounting. She is fully prepared to assume executive secretarial duties in any type of business organization.

SECRETARIAL SCIENCE

Executive Secretary

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
4014	Economics 1	3		6	9	3
5008	Typewriting 1 or Gen. Psych.	5		6	11	3
4008	Introduction to Sociology 1	3		6	9	3
5018	Shorthand 1 or 5062 Skill Building	3	2	6	11	4
		17	2	30	49	16

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
4009	Introduction to Sociology 2	3		6	9	3
4086	General Psychology	3		6	9	3
5009	Typewriting 2	5		6	11	3
5019	Shorthand 2	3	2	6	11	4
		17	2	30	49	16

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
5048	Business Law 1	3		6	9	3
5020	Shorthand 3	3	2	6	11	4
5022	College Accounting 1	3		6	9	3
5011	Executive Typewriting	2	3	4	9	3
5016	Secretarial Practice 1	3		6	9	3
		14	5	28	47	16

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
1006	Business English	3		6	9	3
5017	Secretarial Practice 2 (Elective)	3		6	9	3
5021	Exec/Tech Dictation & Transcription	5	5	10	20	6
5049	Business Law 2 (Elective)	3		6	9	3
5038	College Accounting 2 (Elective)					
		14	5	28	47	15

SECRETARIAL SCIENCE

Legal Secretary

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
4014	Economics 1	3		6	9	3
4008	Introduction to Sociology 1	3		6	9	3
5018	Shorthand 1 or 5062 Skill Building	3	2	6	11	4
5008	Typewriting 1 or Gen. Psych.	5		6	11	3
		17	2	30	49	16

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
4009	Introduction to Sociology 2	3		6	9	3
4086	General Psychology	3		6	9	3
5009	Typewriting 2	5		6	11	3
5019	Shorthand 2	3	2	6	11	4
		17	2	30	49	16

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
5022	College Accounting 1	3		6	9	3
5048	Business Law 1	3		6	9	3
5010	Legal Typewriting	2	3	4	9	3
5020	Shorthand 3	3	2	6	11	4
5016	Secretarial Practice 1	3		6	9	3
		14	5	28	47	16

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
1006	Business English	3		6	9	3
5017	Secretarial Practice 2 (Elective)	3		6	9	3
5038	College Accounting 2 (Elective)	3		6	9	3
5036	Legal Dictation & Transcription	5	5	10	20	6
5049	Business Law 2	3		6	9	3
		17	5	34	56	18

SECRETARIAL SCIENCE

Medical Secretary

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
5008	Typewriting 1	5		6	11	3
5018	Shorthand 1 or 5062 Skill Building	3	2	6	11	4
3077	Human Biology 1	3	2	6	11	4
7027	Medical Assistant Techniques 1	3	3	6	12	4
		17	7	30	54	18

Semester 2

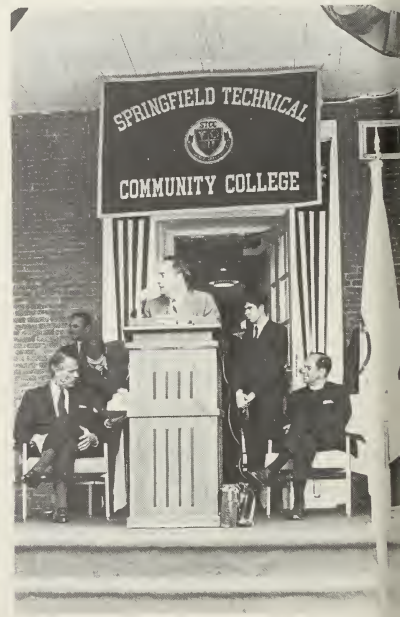
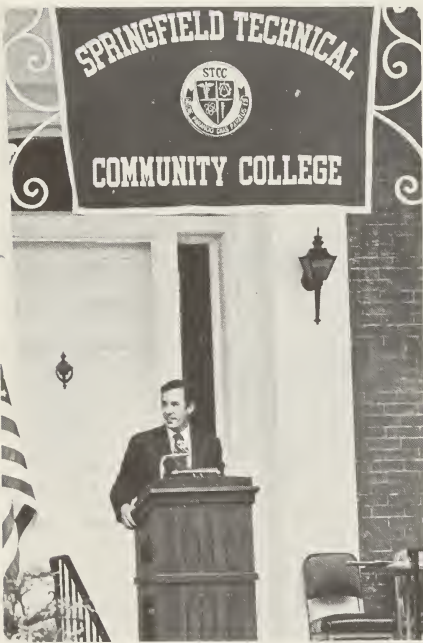
No.	Course Title	Class	Lab	Prep	Units	Credits
5019	Shorthand 2	3	2	6	11	4
5005	Medical Records	3		6	9	3
5012	Medical Typewriting	2	3	4	9	3
7028	Medical Assistant Techniques 2	3	6	9	18	5
3078	Human Biology 2	3	2	6	11	4
		14	13	31	58	19

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
4086	General Psychology	3		6	9	3
5013	Medical Shorthand	3	2	6	11	4
5014	Medical Office Practice 1	3		6	9	3
5031	Our Legal Environment	3		6	9	3
		15	2	30	47	16

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
1006	Business English	3		6	9	3
5034	Medical Dictation & Transcription	5	5	10	20	6
5015	Medical Office Practice 2	3		6	9	3
7080	Med. Assistant Seminar/Field Work	3	12	6	21	6
		14	17	28	59	18

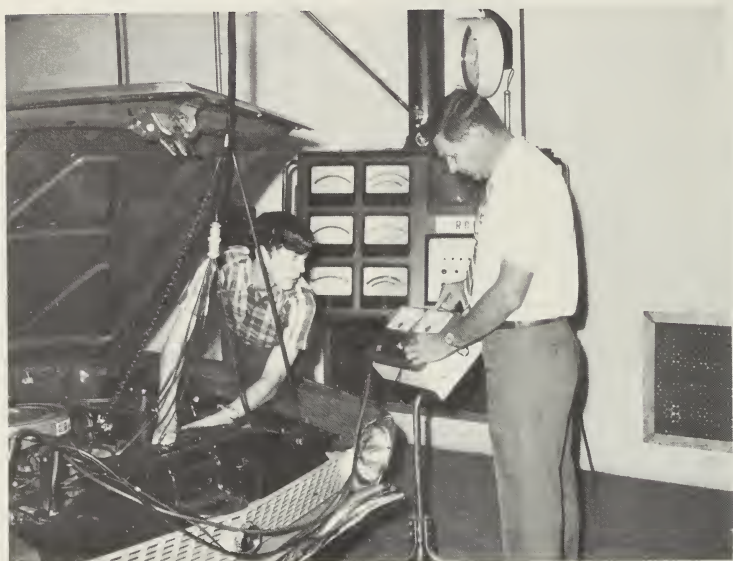


Commencement Exercises

Engineering Technology

- Automotive Technology
 - Bio-Medical Instrumentation Technology
 - Civil Engineering Technology
 - Data Processing Technology
- Electrical Technology
 - Electronics Technology
 - Environmental Technology
 - Graphic Arts Technology
- Heating and Power Technology
 - Landscape Technology
 - Machine and Tool Design Technology
 - Mechanical Technology
- Nuclear Technology (1974)

AUTOMOTIVE TECHNOLOGY



The two-year Automotive Technology curriculum consists of practical work experience in inspecting, testing, servicing, and repairing cars as well as a study of related technical subjects. A knowledge of basic scientific principles and technical information is emphasized so that students can understand why mechanical and technical difficulties occur. Instruction in management and business operations is included in this program to prepare graduates for junior supervisory positions in the automotive field. Major areas to be covered in the program are: engines, transmissions, differentials, brakes, carburetion, electrical systems, and front end suspensions. The instructional strategies rely on lectures, demonstrations, overhead projectors, slide films, charts, text books, and student participation in laboratory assignments in areas being covered.

New large quarters accommodate both classroom and shop labs. A separate engine lab equipped with live engines of the various manufacturers, the latest in electronic testing devices, front end alignment, tire truing, and wheel balancing equipment, together with a separate dynamometer lab where vehicles can be run under actual road load conditions and be observed with attached electrical devices. Graduates are prepared for employment as automotive service technicians, service salesmen and managers, and many other areas related to the automotive field.

AUTOMOTIVE TECHNOLOGY

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
	Mathematics 2321,22,23	3		6	9	3
4073	Human Relations at Work 3	3		6	9	3
6099	Gasoline Engine Systems	2	2	4	8	3
6101	Drive Line	2	2	4	8	3
6112	Machine Tool Techniques		3		3	1
6241	Prog. Engineering Graphics Mod. 1		3		3	1
		13	10	26	49	17

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
3012	Physics 1		6	6	12	4
	Mathematics 2331, 32, 33	3		6	9	3
6100	Gasoline Engines Service	2	2	4	8	3
6102	Automatic Transmissions	2	2	4	8	3
		10	10	26	46	16

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
3002	Chemistry 1	3	3	6	12	4
4014	Economics 1	3		6	9	3
5029	Small Business Management	3		6	9	3
6105	Fuel & Electric Systems	2	2	4	8	3
6103	Brakes	2	2	4	8	3
		13	7	26	46	16

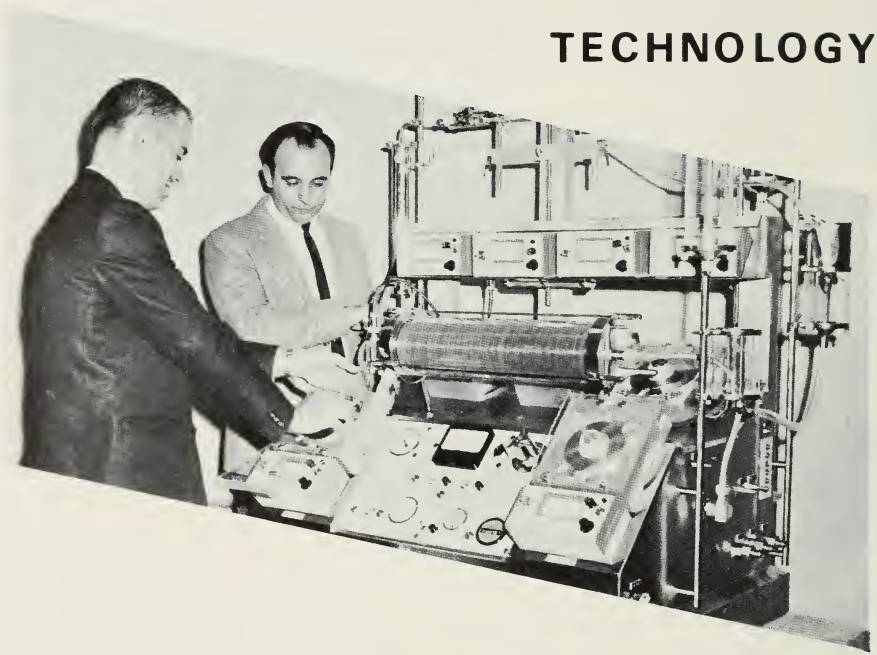
Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
1008	Technical Report Writing	3		6	9	3
5022	College Accounting 1	3		6	9	3
3009	Automotive Chemistry	3	3	6	12	4
6104	Steering & Front Suspension	2	2	4	8	3
6106	Engine Diagnosis & Tuneup	2	2	4	8	3
		13	7	26	46	16

BIO-MEDICAL

INSTRUMENTATION

TECHNOLOGY



Instrumentation is being used increasingly in medical, biological, and research fields. This equipment has become so complex that technicians must have a detailed knowledge of bio-medical procedures and bio-medical terminology so that proper functioning of the equipment and safety of the patient can be assured.

The program provides the general technical knowledge and understanding of the more commonly used bio-medical instruments, components, systems, and circuit techniques.

BIO-MEDICAL INSTRUMENTATION

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
	Mathematics 2331,32,33	3		6	9	3
2334	Slide Rule Math	3		6	9	1
6125	Basic Electricity 391	3	3	6	12	4
6117	Electronic Devices 391	2	3	4	9	3
6004	Bio-Med Techniques 391	3	3	4	10	4
1004	English Composition 1	3		6	9	3
		17	9	32	58	18

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
6118	Bio-Med Measurements 391	2	3	4	9	3
6119	Electronic Circuits 391	2	3	4	9	3
6120	Electronic Amplifiers 391	3	3	6	12	4
6005	Bio-Med Techniques 392	3	3	6	12	4
1005	Composition 2: Intro. to Literature	3		6	9	3
		13	12	26	51	17

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
6121	Bio-Med Measurements 392	2	3	4	9	3
6122	Trouble Shooting 391	2	3	4	9	3
6002	Bio-Med Electronic Systems 391	3	3	6	12	4
6006	Bio-Med Techniques 393	3	3	6	12	4
4008	Introduction to Sociology 1	3		6	9	3
		13	12	26	51	17

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
4014	Economics 1	3		6	9	3
6123	Bio-Med Electronic Systems 392	2	3	4	9	3
6007	Bio-Med Techniques 394	2	3	4	9	3
1007	Fundamentals of Speech	3		6	9	3
6124	Bio-Med Desg/Equip. Selection 391	3	3	6	12	4
		13	9	26	48	16



CIVIL ENGINEERING TECHNOLOGY

The Civil Engineering Technology program is designed to provide an engineering background for persons who wish to enter the building and construction industry as engineering technicians, architectural draftsmen, or as construction managers. Students completing this program should also be able to begin work in the areas of surveying and estimating. The design and construction of residential and light commercial structures are stressed. Certain phases of heavy construction and highway development are also covered.

Students planning to enter this program should have interests in mathematics and science. However, creative ability is also required in the design laboratories involved in this program.

CIVIL ENGINEERING TECHNOLOGY

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
	Mathematics 2331,32,33	3		6	9	3
2334	Slide Rule Math	3		6	9	1
3002	Chemistry 1	3	3	6	12	4
6173	Construction Materials	3		6	9	3
6241	Prog. Engineering Graphics Mod. 1		3		3	1
6242	Prog. Engineering Graphics Mod. 2		3		3	1
		15	9	30	54	16

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
	Mathematics 2341,42,43,44	3		6	9	4
3012	Physics 1		6	6	12	4
6160	Architectural Design & Specifications 1	2	3	4	9	3
	Humanities Elective	3		6	9	3
		11	9	28	48	17

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
4014	Economics 1	3		6	9	3
6058	Strength of Materials	3		6	9	3
6092	Surveying 1	2	6	4	12	4
6096	Soils & Foundations	3		6	9	3
6161	Architectural Design & Specifications 2	2	3	4	9	3
6164	General Construction Lab		3		3	1
		13	12	26	51	17

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
1008	Technical Report Writing	3		6	9	3
6165	Construction Methods & Equipment	3		6	9	3
6163	Construction Estimating	2	3	4	9	3
6097	Roadway Design & Construction	3	3	6	12	4
6177	Construction Management	3		6	9	3
		14	6	28	48	16



DATA PROCESSING TECHNOLOGY AND COMPUTER CENTER

Engineering and scientific data processing is a technology used for the rapid analysis of data, for the solution of complicated formulae, and for the development of instructions used in numerically controlled machine tools. Management uses this technology as a tool for converting raw data into useful information concerning the economy, markets, production, and inventory. The tools of the data processing profession include use of punched card and computer equipment operating automatically at high speeds with extreme accuracy.

Students planning to enter this field require analytical and creative ability. In addition, they need an understanding of the mathematical processes used in engineering and science and the basic accounting and control functions in business. The Data Processing program prepares a student to enter industry as a trained junior programmer. With additional education and work experience, he may advance to a systems specialist. The program meets academic requirements for becoming a Certified Data Processor.

DATA PROCESSING TECHNOLOGY

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
5023	Accounting 1	4		8	12	4
6008	Intro. to Data Processing	3		6	9	3
6017	RPG 1 (Computer Programming)	3	3	6	12	4
6508	DP Lab		3		3	1
		13	6	26	45	15

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
5024	Accounting 2	4		8	12	4
6011	BAL (Basic Assembly Language)	3	3	6	12	4
6202	DP Systems & Procedures	3		6	9	3
	Math Elective	3		6	9	3
		16	3	32	51	17

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
5026	Cost Accounting	3		6	9	3
6012	Cobol 1	3	3	6	12	4
	Elective (Soc. Sci.)	3		6	9	3
	Elective (Business)	3		6	9	3
	Elective (Math)	3		6	9	3
		15	3	30	48	16

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
6013	Cobol 2	3	3	6	12	4
6015	TOS, DOS Tape & Disk Operating System	3		6	9	3
	Elective (Humanities)	3		6	9	3
	Elective (Soc. Sci.)	3		6	9	3
	Elective (Business)	3		6	9	3
		15	3	30	48	16

IBM COMPUTER
MODEL 1620



Computer

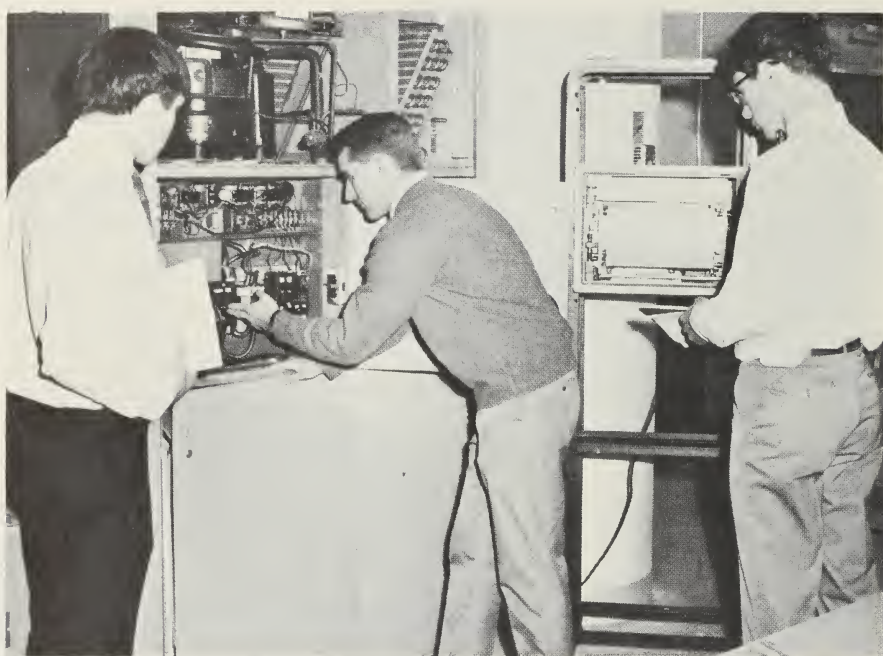




IBM COMPUTER
MODEL 360

Center





ELECTRICAL TECHNOLOGY

The Electrical Technology program prepares students for work in the development, installation, and maintenance of industrial automated systems or related instrumentation applications. Graduates of the program have also been successful as field representatives for manufacturers in the areas of product application and sales.

Students planning to enter this field should have a desire for constructive achievement and for involvement in mathematics, science, and technology.

ELECTRICAL TECHNOLOGY

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
6018	Fundamentals of Electricity 311	3	3	6	12	4
6071	Engineering Graphics 311	3		6	9	3
	Mathematics 2331,32,33	3		6	9	3
1004	English Composition 1	3		6	9	3
2334	Slide Rule Math	3		6	9	1
4073	Human Relations at Work 3	3		6	9	3
		18	3	36	57	17

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
6025	AC Fundamentals	3	3	6	12	4
6023	Fundamentals of Electronics 311	4		8	12	4
	Mathematics 2341,42,43,44	3		6	9	4
1005	Composition 2: Intro. to Literature	3		6	9	3
4093	Industrial Psychology	3		6	9	3
		16	3	32	51	18

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
6028	DC Industrial Applications	2	3	4	9	3
6030	Industrial Electronics Tubes/Circuits	2	3	4	9	3
6033	Semiconductors/Transistors 1	2	3	4	9	3
2009	Math 16 (Computer Logic)	3		6	9	3
3012	Physics 1		6	6	12	4
		9	15	24	48	16

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
6031	Industrial Electro-Mech Systems	2	3	4	9	3
6026	Fundamentals of Instrumentation	2	3	4	9	3
6034	Semiconductors/Transistors 2	2	2	4	8	3
1007	Fundamentals of Speech	3		6	9	3
1008	Technical Report Writing	3		6	9	3
6032	Electro Mech Circuit Design	1		4	5	2
		13	8	28	49	17



ELECTRONICS TECHNOLOGY

The Electronic Technology program is organized to present learning activities that will qualify the graduate to perform job functions in areas such as communications, control systems, computers, electronic drafting, circuit design, and systems testing. Training for a wide range of jobs is provided by a two-year technical program of specialized, intensive instruction designed to fit individuals for useful employment as highly skilled technicians in the electronics field.

Insofar as student preparation and laboratory facilities permit, every effort is made to include in our program those topics suggested by the U. S. Department of Health, Education, and Welfare for the two-year Electronic Technician program. Any student who intends to continue towards the baccalaureate degree in Engineering or Applied Science is encouraged to substitute, in lieu of any requirements in non-departmental courses, those courses offered by the Science and Engineering Transfer Program; e.g., Western Civilization I, 4012 instead of English Composition, 1004.

ELECTRONIC TECHNOLOGY

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
4073	Human Relations at Work 3	3		6	9	3
	Mathematics 2331,32,33	3		6	9	3
2334	Slide Rule Math	3		6	9	1
6178	Electronics Lab 1		3		3	1
6019	Basic Electronics 1	5		10	15	5
		17	3	34	54	16

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
	Mathematics 2341,42,43,44	3		6	9	4
3012	Physics 1		6	6	12	4
6179	Electronics Lab 2		3		3	1
6024	Basic Electronics 2	5		10	15	5
		11	9	28	48	17

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
1008	Technical Report Writing	3		6	9	3
2009	Math 16 Computer Logic	3		6	9	3
6213	Communication Circuits 1	3		6	9	3
6037	Pulse Shaping Techniques	3		6	9	3
6035	Semiconductor Circuits 1	3		6	9	3
6180	Electronics Lab 3		3		3	1
		15	3	30	48	16

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
1007	Fund. of Speech or Electronic Licenses	3		6	9	3
4014	Economics 1	3		6	9	3
6027	Introduction to Computer Circuitry	3		6	9	3
6212	Semiconductor Circuits 2	3		6	9	3
6038	Ultra High Frequency Techniques	3		6	9	3
6181	Electronics Lab 4		3		3	1
		15	3	30	48	16



ENVIRONMENTAL AND PROCESS TECHNOLOGY

The Department of Environmental and Process Technology offers three technical environmental options: Air Quality Technology, Water Quality Technology, and Wastewater Treatment Technology. The Associate in Science Degree may be earned in any one option in two years or in all three options in three years.

The program is oriented toward both environmental and chemical engineering with the objective of training para-professionals who can assist the engineer in detecting and measuring pollution, designing and installing control facilities, or who can operate purification facilities. The graduates will find employment in governmental agencies, industrial facilities, engineering firms, municipal engineering offices, waste treatment plants and related facilities.

The course of study is specifically designed for those students who are interested in the scientific aspects of pollution control. It is definitely career-oriented and full credit will generally not be transferable to a four-year college. Students desiring to enter the program must have had one year of chemistry plus two years of algebra or its equivalent. Those who do not have this background may enroll but they must expect to attend one additional year or two summer sessions to make up their deficiencies.

The three technical options utilize a common first year core curriculum which all students in the department must take. At the end of the first year, each student will select his field of specialization and will enroll in a comprehensive group of technical subjects designed to provide him with a working knowledge of his special field. The students will be trained in both the theory and its application and will receive hands-on instruction on many items of commercial equipment.

ENVIRONMENTAL AND PROCESS TECHNOLOGY

Air Quality

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
	Mathematics 2331,32,33	3		6	9	3
2334	Slide Rule Math	3		6	9	1
3086	Chemistry 11	3	3	6	12	4
1004	English Composition 1	3		6	9	3
1100	Reading Comp. & Study Skills	3		6	9	3
6191	Process Problems 1	3		6	9	3
		18	3	36	57	17

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1008	Technical Report Writing	3		6	9	3
3088	Env. Microbiology	3	3	6	12	4
3094	Env. Science	3		6	9	3
3087	Chemistry 12	3	3	6	12	4
6226	Process Problems 2	1	6	2	9	3
		13	12	26	51	17

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
6184	Environmental Unit Processes	2	3	4	9	3
6201	Industrial Health & Safety	3		6	9	3
6200	Air Sampling & Analysis	1	6	2	9	3
6233	Basic Instrumentation	2	3	4	9	3
	Elective	3		6	9	3
		11	12	22	45	15

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
2015	Statistics & Quality Control	3		6	9	3
6197	Air Quality Control Processes	1	6	2	9	3
6185	Air Quality Meteorology	2	3	4	9	3
6234	Industrial Instrumentation	2	3	4	9	3
	Elective	3		6	9	3
		11	12	22	45	15

ENVIRONMENTAL PROCESS TECHNOLOGY

Wastewater Treatment

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
	Mathematics 2331,32,33	3		6	9	3
2334	Slide Rule Math	3		6	9	1
3086	Chemistry 11	3	3	6	12	4
1004	English Composition 1	3		6	9	3
1100	Reading Comp. & Study Skills	3		6	9	3
6191	Process Problems 1	3		6	9	3
		18	3	36	57	17

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1008	Technical Report Writing	3		6	9	3
3088	Env. Microbiology	3	3	6	12	4
3094	Env. Science	3		6	9	3
3087	Chemistry 12	3	3	6	12	4
6226	Process Problems 2	1	6	2	9	3
		13	12	26	51	17

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
6201	Industrial Health & Safety	3		6	9	3
6184	Env. Unit Processes	2	3	4	9	3
6190	Systems Operations & Maintenance	1	6	2	9	3
6233	Basic Instrumentation	2	3	4	9	3
	Elective	3		6	9	3
		11	12	22	45	15

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
2015	Statistics & Quality Control	3		6	9	3
6192	Treatment Plant Unit Operations	1	6	2	9	3
3089	Chemistry of Liquid Wastes	2	3	4	9	3
6234	Industrial Instrumentation	2	3	4	9	3
	Elective	3		6	9	3
		11	12	22	45	15

ENVIRONMENTAL PROCESS TECHNOLOGY

Water Quality

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
	Mathematics 2331,32,33	3		6	9	3
2334	Slide Rule Math	3		6	9	1
3086	Chemistry 11	3	3	6	12	4
1004	English Composition 1	3		6	9	3
1100	Reading Comp. & Study Skills	3		6	9	3
6191	Process Problems 1	3		6	9	3
		18	3	36	57	17

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1008	Technical Report Writing	3		6	9	3
3088	Env. Microbiology	3	3	6	12	4
3094	Env. Science	3		6	9	3
3087	Chemistry 12	3	3	6	12	4
6226	Process Problems 2	1	6	2	9	3
		13	12	26	51	17

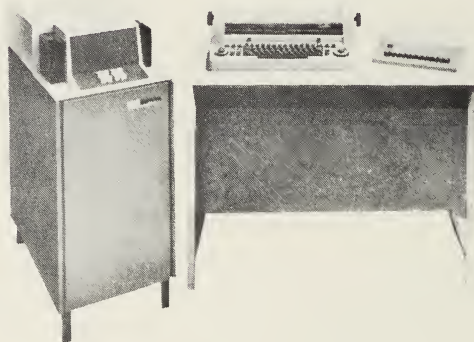
Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
3095	Water Sampling & Analysis	1	6	2	9	3
6184	Environmental Unit Processes	2	3	4	9	3
6201	Industrial Health & Safety	3		6	9	3
6233	Basic Instrumentation	2	3	4	9	3
	Elective	3		6	9	3
		11	12	22	45	15

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
2015	Statistics & Quality Control	3		6	9	3
6187	Water Quality Unit Operations	1	6	2	9	3
6189	Water Supply & Distribution	2	3	4	9	3
6234	Industrial Instrumentation	2	3	4	9	3
	Elective	3		6	9	3
		11	12	22	45	15

GRAPHIC ARTS TECHNOLOGY



The Graphic Arts Department offers a curriculum designed to prepare students for the many and varied careers available in the commercial printing and advertising business.

The courses are devoted to functional discussions crossing most branches of the printing industry. It is the objective of the department to relate the many branches of the industry to each other and to the totality of contemporary printing.

Rochester Institute of Technology, as well as other institutions offering Graphic Arts speciality courses, has indicated that it will accept credits from this program toward an advanced degree in Printing and Publishing.

GRAPHIC ARTS TECHNOLOGY

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
4086	General Psychology	3		6	9	3
4014	Economics 1	3		6	9	3
6077	Graphic Arts Processes 1	1	3	2	6	2
2008	Math 15	4		8	12	4
6114	Typography & Copy Preparation	1	3	2	6	2
		15	6	30	51	17

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
	Humanities Elective	3		6	9	3
3002	Chemistry 1	3	3	6	12	4
6083	Layout & Copy Preparation	1	3	2	6	2
6078	Graphic Arts Processes 2	1	3	2	6	2
		11	9	22	42	14

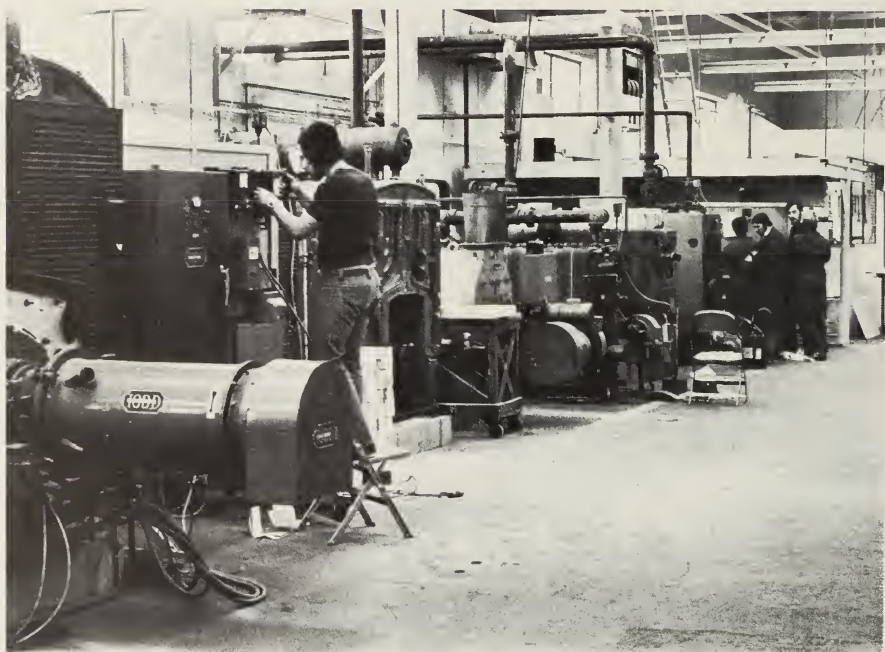
Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
	Humanities Elective	3		6	9	3
3005	Gen. Chemistry 21-Trans. students only	3	3	6	12	4
6204	Offset Strip & Plate (Elective)	1	3	2	6	2
6075	Process Photography (Elective)	1	4	2	7	2
6203	Graphic Design (Elective)	1	3	2	7	2
6062	Printing Management (Elective)	3		6	9	3
6144	Production Techniques 1		9		9	3
		12	22	24	59	19

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
	Humanities Elective	3		6	9	3
3003	Chemistry 361	3	3	6	12	4
6145	Production Techniques 2		9		9	3
6204	Offset Strip & Plate (Elective)	1	3	2	6	2
6205	Offset Presswork (Elective)	1	3	2	6	2
6206	Advanced Typography (Elective)	1	3	2	6	2
6075	Process Photography (Elective)	1	3	2	7	2
		10	24	20	55	18

HEATING AND POWER ENGINEERING TECHNOLOGY



The Heating and Power engineering program is unique in the sense that it is one of two such programs offered on the east coast. An up-to-date extensive laboratory facility has been created for this course, utilizing the very latest in equipment and control devices.

Seniors who successfully complete all course requirements are awarded the Associate in Science Degree. In addition, they are given the opportunity to earn additional awards by taking the Certificate of Competency and the Stationary Engineers License examinations as administered by the Massachusetts Department of Public Safety.

Placement opportunities are excellent and varied. The Heating and Power graduate is prepared to enter a stable, basic industry that offers career positions such as manufacturers' representatives, field service engineers, energy system detailers/designers, lab technicians, construction field estimators, sales engineers and independent businessmen.

HEATING AND POWER TECHNOLOGY

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
	Mathemantics 2321, 22, 23	3		6	9	3
4073	Human Relations at Work 3	3		6	9	3
6073	Engineering Graphics 331	1	3	2	6	2
6020	Fundamentals of Electricity 331	3		6	9	3
6110	Mechanical Skills & Procedures 1	2	6	4	12	4
		15	9	30	54	18

Semester 2

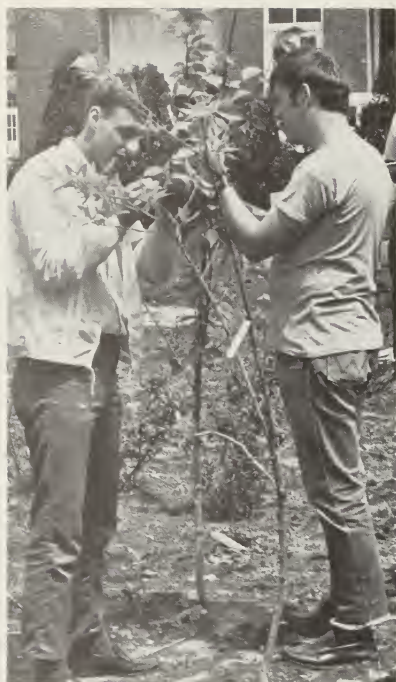
No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
	Mathematics 2331,32,33	3		6	9	3
2334	Slide Rule Math	3		6	9	1
1007	Fundamentals of Speech	3		6	9	3
6044	Hydronic Layouts & Construction	1	3	2	6	2
6040	Control Circuits & Applications 1	2	3	4	9	3
6111	Mechanical Skills & Procedures 2		6	4	10	2
		15	12	34	61	17

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
3002	Chemistry 1	3	3	6	12	4
6041	Control Circuits & Applications 2	2	6	4	12	4
6042	Heating System Design	2	3	4	9	3
6155	Power Plant Operation 1	1	3	2	6	2
6222	Fundamentals of Air Conditioning	3		6	9	3
		11	15	22	48	16

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
1008	Technical Report Writing	3		6	9	3
3008	Chemistry of Water/Fuels	3	3	6	12	4
6043	Advanced Heating System Design	2	3	4	9	3
6045	Heating & Power Laboratory	2	6	4	12	4
6156	Power Plant Operation 2	1	3	2	6	2
		11	15	22	48	16



LANDSCAPE TECHNOLOGY



Students enrolled in this program will receive a broad base in the development and maintenance of land areas. Topics ranging from plant identification and use, tree and landscape maintenance, to landscape design and construction are included as part of the curriculum. The importance of qualified field personnel is stressed throughout the program. Students will be given an appreciation and understanding of the effects that can be created by well planned landscape design and maintenance.

Graduates may be employed by nurseries, landscape contractors, private and public parks, and by business firms as grounds maintenance specialists. With the rapid development of more complex and varied materials and equipment for use in this field, there is an increasing need for properly trained personnel to fill responsible positions, both in field work and in planning and management.

LANDSCAPE TECHNOLOGY

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
4073	Human Relations at Work 3	3		6	9	3
3021	Botany 1	2	2	4	8	3
6088	Principles of Horticulture	2	3	4	9	3
	Elective or Math Prereq. for 2008	3		6	9	3
		13	5	26	44	15

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
3022	Botany 2 (Tree Identification)	1	4	4	9	3
2008	Math 15	4		8	12	4
6140	Engineering Graphics 721		6	2	8	3
3002	Chemistry 1	3	3	6	12	4
		11	13	26	50	17

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
3023	Botany 3 (Shrub Identification)	1	4	4	9	3
6090	Tree Maintenance	2	3	4	9	3
6086	Landscape Design 1	1	4	4	9	3
6093	Surveying 721	1	4	4	9	3
1007	Fundamentals of Speech	3		6	9	3
6089	Landscape Operations Planting	2	2	4	8	3
		10	17	26	53	18

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
3024	Botany 4 (Turf)	2	2	4	8	3
6087	Landscape Design 2	1	4	4	9	3
6094	Construction Methods	2	3	4	9	3
6085	Nursery Practice & Propagation	2	3	4	9	3
6177	Construction Management	3		6	9	3
		10	12	22	44	15

MACHINE AND TOOL DESIGN TECHNOLOGY



This program prepares the graduate as an Engineering Aide or Technician in the fields of mechanical, industrial, and manufacturing engineering. The program develops the necessary background in Mathematics, Engineering Graphics, Physics, Chemistry, Strength of Materials, Fluid Power, and Design Principles. To qualify in the fields listed above, graduates are employed as detail draftsmen, tool and machine designers, laboratory assistants in research and development, sales engineers, and field representatives.

In the design laboratory, the student is given the opportunity to use his initiative and creative ability in designing machines and tool complexes of his own. Since a background in high school Algebra, Physics, Mechanical Drawing, and Chemistry is required in the first semester, these courses must be prerequisites.

MACHINE AND TOOL DESIGN TECHNOLOGY

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
	Mathematics 2331, 32, 33	3		6	9	3
2334	Slide Rule Math	3		6	9	1
3002	Chemistry 1	3	3	6	12	4
6054	Manufacturing Processes 1	2	3	4	9	3
6065	Tool Design 1	2	6	4	12	4
		16	12	32	60	18

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
	Mathematics 2341,42,43,44	3		6	9	4
3012	Physics 1		6	6	12	4
6055	Manufacturing Processes 2	2	3	4	9	3
6113	Tool Design 2	2	6	4	12	4
		10	15	26	51	18

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
6058	Strength of Materials	3		6	9	3
6150	Fluid Power	3		6	9	3
6066	Design of Machine Elements	2	6	4	12	4
6157	General Engineering Lab 1	1	3	2	6	2
6236	Material Science Lab		3		3	1
6232	Fortran for Science & Engineers	3	3	3	9	3
		12	15	21	48	16

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
1008	Technical Report Writing	3		6	9	3
6064	Industrial Materials	3		6	9	3
6067	Machine Design 1	2	6	4	12	4
6158	General Engineering Lab 2	1	3	2	6	2
3013	Physics 2	3	3	6	12	4
		12	12	24	48	16

MECHANICAL TECHNOLOGY (Production Option)



This program qualifies students for a variety of important and opportunity-laden positions in the manufacturing and service industries. These opportunities exist not only in the established industries, but in such developing areas as pollution abatement devices and controls.

Among the fields potentially accessible are Quality Control and Reliability, Time and Motion Study, Process Planning, Purchasing, Production Management, Laboratory Assistant, and Technical Sales. The manufacturing industry areas include metal shaping and fabrication, assembly, plastics fabrication and equipment related to these areas, while service industries include, but are not limited to, contract engineering, warehousing, and hospitals.

MECHANICAL TECHNOLOGY

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
	Mathematics 2331,32,33	3		6	9	3
2334	Slide Rule Math	3		6	9	1
3002	Chemistry 1	3	3	6	12	4
6054	Manufacturing Processes 1	2	3	4	9	3
6241	Prog. Engineering Graphics Mod. 1		3		3	1
		14	9	28	51	15

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
	Mathematics 2341,42,43,44	3		6	9	4
3012	Physics 1		6	6	12	4
6052	Engineering Analysis 1	3		6	9	3
6055	Manufacturing Processes 2	2	3	4	9	3
		11	9	28	48	17

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
	Humanities Elective	3		6	9	3
3013	Physics 2	3	3	6	12	4
2015	Statistics & Quality Control	3		6	9	3
6150	Fluid Power	3		6	9	3
6157	General Engineering Lab 1	1	3	2	6	2
		13	6	26	45	15

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
	Humanities Elective	3		6	9	3
6061	Production Control	4		8	12	4
6064	Industrial Materials	3		6	9	3
6158	General Engineering Lab 2	1	3	2	6	2
6059	Work Simplification	3		6	9	3
		14	3	28	45	15



Allied Health Sciences

- Dental Assistant
 - Dental Hygienist
 - Medical Assistant
 - Medical Laboratory Assistant (CLA)
- Medical Laboratory Technician (MLT)
 - Mental Health Technician
 - Nursing
 - Operating Room Technician
- Physical Therapy Assistant
 - Radiologic Technology
 - Respiratory Therapy Technician



SPRINGFIELD MUNICIPAL HOSPITAL



WESSON MEMORIAL HOSPITAL



SPRINGFIELD HOSPITAL MEDICAL CENTER



WESSON WOMEN'S HOSPITAL

Springfield Hospitals

ILIATED WITH SPRINGFIELD
HNICAL COMMUNITY COLLEGE



MERCY HOSPITAL



DENTAL ASSISTANT

The Dental Assistant department strives to educate students in all phases of Dental Assisting, including business, chairside, and laboratory procedures. This preparation is conducted in the Dental Assisting Clinic at the College under the direction of two dentists and two hygienists, as well as in supervised clinical experience off campus.

The Dental Assistant is responsible for developing and maintaining the effectiveness of dental office routines. Included in her training to achieve this ability are techniques of chairside assisting, knowledge of dental materials, and instrument preparation, laboratory procedures, operative X-ray technology, knowledge of dental office systems, and business procedures. An additional requirement for the program is English Composition, Human Relations at Work, and Medical/Dental Records.

This course is approved by and conforms to the curriculum prescribed by the Council on Education of the American Dental Association and the American Dental Assistants Association. Graduates are eligible to take the National Certification Examination.

DENTAL ASSISTANT

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
7079	Professional Relations & Administration	2		4	6	2
7025	Dental Sciences 1	2	2	4	8	2
5007	Dental Typewriting	2	3	4	9	3
7023	Dental Assistants Techniques 1	2	4	6	12	2
7082	Dental Materials	1	3	2	6	2
7083	Dental Radiology	1			2	1
7084	Dental Anatomy	1	1		2	1
		14	13	26	54	16

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
4072	Human Relations at Work 2	2		4	6	2
5006	Dental Records	3		6	9	3
7026	Dental Sciences 2	2		4	6	2
7024	Dental Assistants Techniques 2	3	10	6	19	6
7065	Supervised Clinical Experiences 411		15		15	4
		10	25	20	55	17



DENTAL

HYGIENIST



The Dental Hygiene program seeks to educate men and women who are able to function as competent dental hygienists to provide preventive oral health services for the public in private dental offices, clinics, and schools. The graduates will be prepared for entrance to the National Board Examination in Dental Hygiene as well as for State Board Examinations which together lead to licensure to practice. Immediate employment will be available upon graduation and the opportunity for further education at the baccalaureate level is also possible.

Applicants must have an academic background in biology, chemistry, and mathematics. The Scholastic Aptitude Test and the Dental Hygiene Aptitude Test must be taken. A college preparatory course in high school and academic rank in the upper 1/4 of the graduating class are also necessary. A personal interview is required.

The Dental Hygiene department has two primary aims: to prepare students for employment as dental hygienists immediately after graduation and to prepare and motivate students to continue their education in the field of dental hygiene by obtaining the baccalaureate degree. Advanced degrees will enable participation in broader areas of dental hygiene.

All courses listed in the curriculum are required for graduation from the Dental Hygiene program.

DENTAL HYGIENIST

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
3102	Physio Chemistry & Anatomy 1	3	3	6	12	4
7120	Oral Anatomy	2	4	6	12	3
7121	Intro. to Dental Hygiene	2	4	4	10	3
7125	Nutrition	2		4	6	2
		12	11	26	49	15

Semester 2

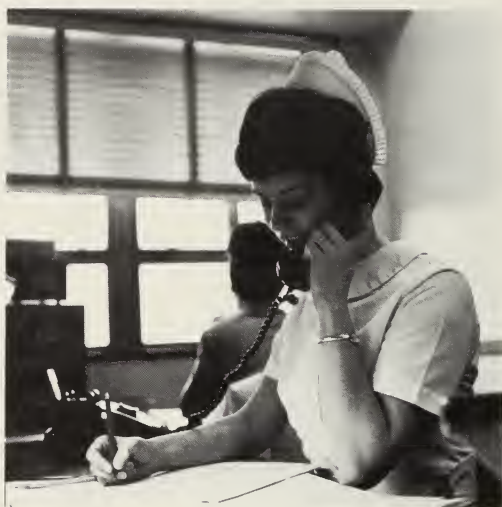
No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
7126	Periodontology	2		4	6	2
7127	Dental Materials	1	3	2	6	2
7128	Oral Pathology & Histology	3		6	9	3
3103	Physio Chemistry & Anatomy 2	3	3	6	12	4
7129	Clinical Dental Hygiene 1		12		12	3
		12	18	24	54	17

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
4086	General Psychology	3		6	9	3
3028	Microbiology	3	3	6	12	4
7130	Community Health	3		6	9	3
7131	Pharmacology	2		4	6	2
7132	Dental Specialities	2		4	6	2
7133	Clinical Dental Hygiene 2		9		9	3
		13	12	26	51	17

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
4092	Psy. of Human Adj. & Personal Effect	3		6	9	3
1007	Fundamentals of Speech	3		6	9	3
4008	Introduction to Sociology 1	3		6	9	3
7134	Clinical Dental Hygiene 3		12		12	4
5061	Practice Management	3		6	9	3
		12	12	24	48	16



MEDICAL ASSISTANT

The two-year program prepares students to meet the rigorous demands of today's practicing physician and his need for a skilled Medical Assistant to handle the increasing administrative and technical details of his medical practice. General education and technical studies prepare the Medical Assistant to perform at various levels of career interest, knowledge, and skills.

An opportunity for a unit of supervised clinical experience in cooperating health agencies is provided during the fourth semester.

Graduates are qualified to accept positions in medical offices, hospitals, or other community health service agencies.

For students seeking a job entry career, the option for a one-year certificate program will provide an opportunity for placement in medical settings requiring knowledge of routine office procedures.

MEDICAL ASSISTANT

* Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
7002	Foundations of Health Services	3		6	9	3
3077	Human Biology 1	3	2	6	11	4
7027	Medical Assistant Techniques 1	3	3	6	12	4
5008	Typewriting 1	5		6	11	3
		17	5	30	52	17

* Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
3078	Human Biology 2	3	2	6	11	4
5012	Medical Typewriting	2	3	4	9	3
7028	Medical Assistant Techniques 2	3	6	9	18	5
		11	11	25	47	15

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
1007	Fundamentals of Speech	3		6	9	3
4086	General Psychology	3		6	9	3
5031	Our Legal Environment	3		6	9	3
5014	Medical Office Practice 1	3		6	9	3
7085	Medical Assistant Techniques 3	3	3	6	12	4
		15	3	30	48	16

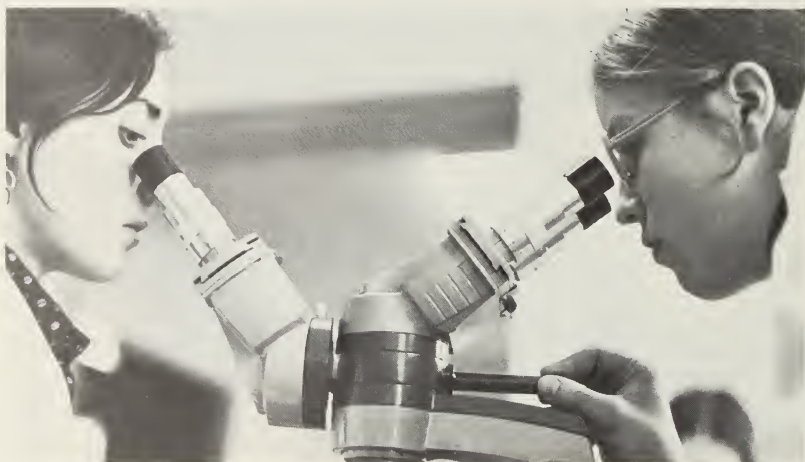
Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
1006	Business English	3		6	9	3
4085	Child & Developmental Psychology	3		6	9	3
5015	Medical Office Practice 2	3		6	9	3
7080	M. A. Seminar & Field Work	3	12	6	21	6
		12	12	24	48	15

* 1-year Certificate Program

MEDICAL LABORATORY

ASSISTANT (CLA)



Advances in clinical medicine have resulted in the ever increasing demand for supportive laboratory personnel to assist in the performance of diagnostic tests. Under the supervision of a pathologist or a medical technologist, the Medical Laboratory Assistant provides such services as collecting blood samples and performing routine laboratory tests which demand a maximum of skills without requiring extensive theoretical background. This program requires that the student spend 12 consecutive months in preparation with the time divided between a minimal amount of theory acquired on campus and further development of skills in one of the affiliating hospitals.

Graduates of this program receive a Certificate from the College and are eligible to take the National Certifying Examination for Certified Laboratory Assistants which is sponsored by the American Society of Clinical Pathologists.

Applicants must have completed a college preparatory course with chemistry and mathematics included.

MEDICAL LABORATORY ASSISTANT (CLA)

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1007	Fundamentals of Speech	3		6	9	3
3091	Anatomy & Physiology 1	3	3	6	12	4
7031	Introductory Clinical Lab	4	9	8	20	6
7032	Hematology & Coagulation	3	10	6	17	5
		13	22	26	58	18

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
3092	Anatomy & Physiology 2	3	3	6	12	4
7033	Clinical Chemistry	4	8	8	20	6
7034	Immune Hematology	4	8	8	20	6
		11	19	22	52	16

Summer Special

No.	Course Title	Class	Lab	Prep	Units	Credits
7035	Clinical Lab Practicum					



MEDICAL LABORATORY

TECHNICIAN (MLT)



This program offers an interrelated curriculum which provides the student with a background in general education and the basic skills necessary to function in a clinical laboratory. Fundamentals of clinical microscopy, microbiology, clinical chemistry, immunohematology and hematology provide the basis for the course which includes a twenty-week externship in one of the affiliating hospitals. This period presently extends from April through August of the Freshman year. The Senior year is spent in fulfilling the requirements for an Associate Degree in Science.

Applicants must have completed a college preparatory course in high school which included chemistry and mathematics.

Graduates of this course are qualified to accept positions in a clinical laboratory where they work under the direction of a pathologist or qualified medical technologist. Persons completing the course are eligible to take the National Certifying Examination for Medical Laboratory Technicians sponsored by the American Society of Clinical Pathologists.

MEDICAL LABORATORY TECHNICIAN (MLT)

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1007	Fundamentals of Speech	3		6	9	3
3091	Anatomy & Physiology 1	3	3	6	12	4
7032	Hematology & Coagulation	3	10	6	17	5
7031	Introductory Clinical Lab	4	9	8	20	6
		13	22	26	58	18

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
3092	Anatomy & Physiology 2	3	3	6	12	4
7033	Clinical Chemistry	4	8	8	20	6
7034	Immunal Hematology	4	8	8	20	6
		11	19	22	52	16

Summer Special

No.	Course Title	Class	Lab	Prep	Units	Credits
7035	Clinical Lab Practicum					

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
2080	Finite Math 1	3		6	9	3
3080	Biology 1	3	3	6	12	4
3109	General Chemistry 101	3	3	6	12	4
		12	6	24	42	14

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
2081	Finite Math 2	3		6	9	3
3081	Biology 2	3	3	6	12	4
3110	General Chemistry 102	3	3	6	12	4
		12	6	24	42	14



MENTAL HEALTH TECHNICIAN

This program prepares a generalist to work with the professional in performing a variety of assigned tasks in all areas of human services. Recognition is given to the important concept of the multi-discipline team in community service work. Preparation of qualified personnel educated in the community college will help meet emerging manpower needs in all areas of human services; i.e., mental health, public health, and social services.

The program coordinates general education courses with field work and studies. Field work and studies combine lectures, field trips, and a rotating supervised practicum in selected community service organizations. Students are provided the opportunity to gain experience in a wide range of human service facilities giving service to people of all ages.

MENTAL HEALTH TECHNICIAN

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
4008	Introduction to Sociology 1	3		6	9	3
7017	Field Work & Studies 1	3	3	6	12	4
3104	Human Anatomy/Mental Health	3		6	9	3
4086	General Psychology	3		6	9	3
		15	3	30	48	16

Semester 2

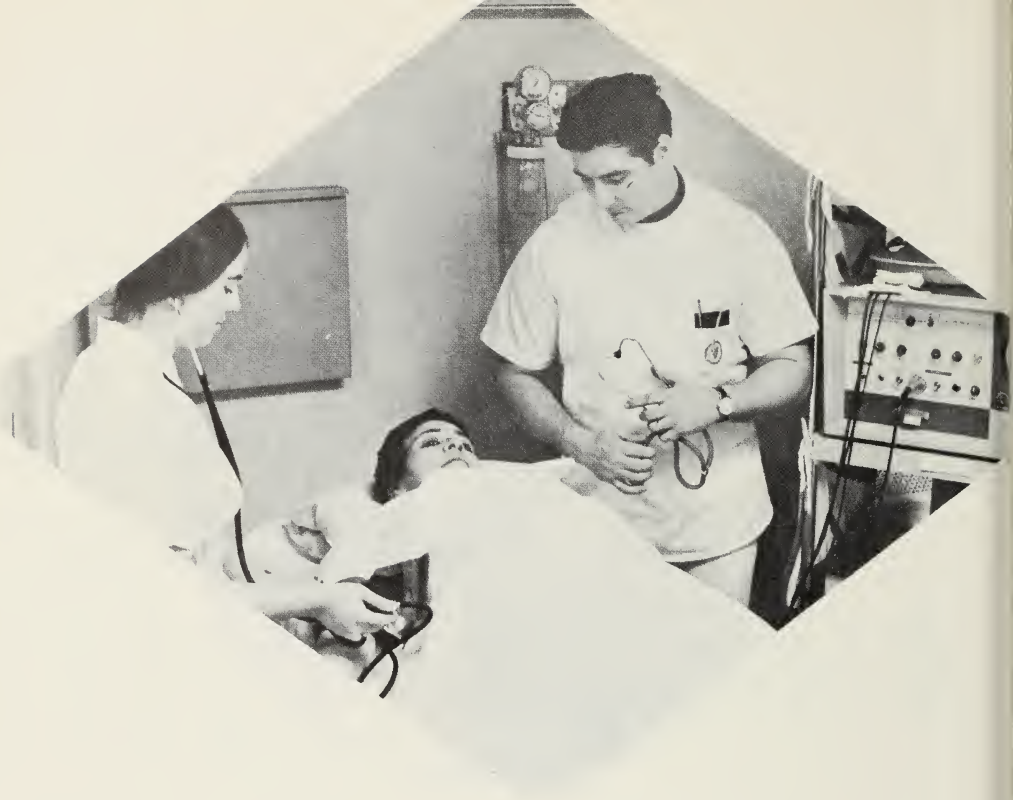
No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
4009	Introduction to Sociology 2	3		6	9	3
7018	Field Work & Studies 2	3	3	6	12	4
4085	Child & Developmental Psychology	3		6	9	3
1007	Fundamentals of Speech	3		6	9	3
		15	3	30	48	16

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
4014	Economics 1	3		6	9	3
4092	Psych. of Human Adj. & Personal Effect.	3		6	9	3
5008	Typewriting 1 or Elective	5		6	11	3
7019	Seminar Field Work & Studies 3		6	2	7	3
7021	Seminar & Review 1	3		6	9	3
		14	6	26	45	15

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
	Elective	3		6	9	3
7020	Sup. Practicum/Field Work/Studies 4	2	12	4	18	6
4087	Prin. of Normal/Abnormal Behavior	3		6	9	3
7022	Seminar & Review 2	3		6	9	3
		11	12	22	45	15



NURSING

The nursing curriculum is planned to prepare young men and women as professional nurses who will be competent to render safe and effective nursing care to people within the normal life cycle, both in health and illness. The community centered approach combines both liberal and technical education for the student within the college and community health agencies. For matriculation, students must carry a "C" average in their nursing major.

The student who successfully completes the prescribed curriculum earns the degree of Associate in Science and is eligible to take the licensing examination to qualify as a Registered Nurse. The program is approved by the Massachusetts Board of Registration in Nursing.

NURSING

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
4086	General Psychology	3		6	9	3
3091	Anatomy & Physiology 1	3	3	6	12	4
7072	Fundamentals of Nursing	3	11	6	20	6
		12	14	24	50	16

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
3028	Microbiology	3	3	6	12	4
4085	Child & Developmental Psychology	3		6	9	3
3092	Anatomy & Physiology 2	3	3	6	12	4
7073	Parental-Child Nursing	3	12	6	21	7
1005	Composition 2: Intro. to Literature	3		6	9	3
		15	18	30	63	21

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
4008	Introduction to Sociology 1	3		6	9	3
7074	Mental-Physical Illness 1	4	15	8	27	9
4092	Psych. of Human Adjust & Personal Effect.	3		6	9	3
		10	15	20	45	15

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
4087	Prin. of Normal/Abnormal Behavior	3		6	9	3
7077	Nursing Seminar	2		2	4	2
7075	Mental-Physical Illness 2	2	9	4	15	5
7076	Mental-Physical Illness 3	2	9	4	15	5
4009	Introduction to Sociology 2	3		6	9	3
		12	18	22	52	18

OPERATING ROOM TECHNICIAN



The operating room technician has rapidly become an essential and accepted member of an operating room team. The program prepares the technician to function as a member of a surgical team or as an assistant to the surgeon, anesthesiologist, or professional nurse in the operating room. The program combines theory and practice of surgical asepsis in the operating room, delivery room, emergency room, and central service department. It is designed to develop knowledge and skill in maintaining aseptic techniques within the hospital area.

OPERATING ROOM TECHNICIAN

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
3027	Practical Asepsis	2	2	4	8	3
3093	Human Anatomy/ORT	3	2	6	11	4
7002	Foundations of Health Services	3		6	9	3
7007	Foundations of ORT 1	2	8	4	14	5
		13	12	26	51	18

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
4072	Human Relations at Work 2	2		4	6	2
7008	O. R. Techniques & Procedures 2	3		6	9	3
7063	Supervised Clinical Experience 471	1	12	2	15	5
7064	Supervised Clinical Experience 472	1	12	2	15	5
		7	24	14	45	15



PHYSICAL THERAPY ASSISTANT



The objective of this program is to prepare men and women for employment within a physical therapy department. The graduate physical therapy assistant works under the direction and supervision of a registered physical therapist performing patient related activities and other tasks required for the operation of the service.

The two-year curriculum leading to an Associate Degree follows the guidelines adopted by the American Physical Therapy Association. The curriculum is designed to develop technical knowledge and skills, and background information for understanding in anatomy, physiology, kinesiology, disease processes, psychological and interpersonal relations. In addition, emphasis is placed on ethical and legal aspects. Approximately one semester of the program is supervised practice in selected clinical settings.

PHYSICAL THERAPY ASSISTANT

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
4086	General Psychology	3		6	9	3
3091	Anatomy & Physiology 1	3	3	6	12	4
4008	Introduction to Sociology 1	3		6	9	3
7037	Physical Therapy Assistant 1	2	3	4	9	3
		14	6	28	48	16

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
3092	Anatomy & Physiology 2	3	3	6	12	4
7002	Foundations of Health Services	3		6	9	3
7006	Dynamics of Human Motion	2	2	4	8	3
7038	Physical Therapy Assistant 2	2	3	4	9	3
		13	8	26	47	16

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
4014	Economics 1	3		6	9	3
4092	Psych. of Human Adjust & Personal Effect.	3		6	9	3
7003	Medical Lectures	3		6	9	3
	Elective	3		6	9	3
7039	Physical Therapy Assistant 3	2	3	4	9	3
		14	3	28	45	15

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
7042	Physical Therapy Assistant Seminar	3		6	9	3
7040	Supervised Clinical Experience 441		18		18	6
7041	Supervised Clinical Experience 442		18		18	6
		3	36	6	45	15



RADIOLOGIC TECHNOLOGY

The Radiologic Technology program prepares an individual to become an important member of the radiology team, in that he or she produces diagnostic films and radiographs as well as assisting the radiologist in fluoroscopic examinations.

Students spend half of each day at the college and the other half at one of the affiliating hospitals, Wesson Memorial and Springfield Hospital Medical Center. By keeping practicum and didactics in juxtaposition, the student learns better by being able to put into practice what he or she has recently learned. A live 500 mA X-ray unit, numerous phantoms, a wide assortment of grids, screens, and other equipment on campus enable the student to attain the necessary skills plus exposure to anatomy and physiology, radiologic physics, radiologic math, and liberal arts courses including English Composition, Sociology, and Psychology.

Students successfully completing this program will have their Associate in Science degree from the College and their Radiologic Technology diploma from the American Registry of Radiologic Technologies, which is the national certifying body. The program operates under the auspices of the Joint Review Committee on Medical Education in Radiologic Technology of the American Medical Association.

RADIOLOGIC TECHNOLOGY

Summer Special

No.	Course Title	Class	Lab	Prep	Units	Credits
6207	Orientation & Professional Ethics					2
6208	Fundamentals of Radiologic Technology					4
						6

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
2084	Mathematics of Radiology	3		6	9	3
3091	Anatomy & Physiology 1	3	3	6	12	4
6166	Radiologic Technology 1	3	3	6	12	4
		12	6	24	42	14

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
3083	Radiologic Physics 1	3	3	6	12	4
3092	Anatomy & Physiology 2	3	3	6	12	4
6167	Radiologic Technology 2	3	3	6	12	4
		12	9	24	45	15

Summer Special

No.	Course Title	Class	Lab	Prep	Units	Credits
6209	Principles of Isotopes & Therapy					2
6210	Application of Radiologic Technology					4
						6

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
4008	Introduction to Sociology 1	3		6	9	3
4086	General Psychology	3		6	9	3
3084	Radiologic Physics 2	3	3	6	12	4
6168	Radiologic Technology 3	3	3	6	12	4
		12	6	24	42	14

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
4009	Introduction to Sociology 2	3		6	9	3
4085	Child Developmental Psychology	3		6	9	3
3082	Clinical Physics	3		6	9	3
6169	Radiologic Technology 4	3	9	6	18	6
		12	9	24	45	15



RESPIRATORY THERAPY TECHNICIAN



Respiratory Therapy is one of the newest fields in hospital work and has received considerable attention in recent years due to public interest in the problems of air pollution and smoking. The respiratory therapist administers treatments and medications to deal with diseases of the respiratory tracts such as emphysema, bronchitis, and industrial diseases. Therapists also carry out various diagnostic tests to help the physician in determining the proper course of treatment for his patient.

The graduate registered therapist is assured of rapid advancement in a field where there are twenty times as many jobs as therapists to fill them. While the greater number of graduates work in hospitals or hold teaching positions, the future will undoubtedly see openings in industry, rehabilitation centers, and home care programs.

The program is sponsored by the Mercy Hospital in cooperation with the College and is approved by the Board of Schools of Inhalation Therapy. Other affiliating agencies include Holyoke Hospital and the Springfield Hospital Medical Center.

RESPIRATORY THERAPY

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
	Mathematics 2331,32,33	3		6	9	3
2334	Slide Rule Math	3		6	9	1
4008	Introduction to Sociology 1	3		6	9	3
3091	Anatomy & Physiology 1	3	3	6	12	4
3109	General Chemistry 101	3	3	6	12	4
7078	Fundamentals of Inhalation Therapy 1	3		6	9	3
		21	6	42	69	21

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
3110	General Chemistry 102	3	3	6	12	4
4009	Introduction to Sociology 2	3		6	9	3
3092	Anatomy & Physiology 2	3	3	6	12	4
7081	Fundamentals of Inhalation Therapy 2	3		6	9	3
		15	6	30	51	17

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
3028	Microbiology	3	3	6	12	4
4086	General Psychology	3		6	9	3
3014	Physics 14	3	3	6	12	4
7011	Intro. to Respiratory Therapy Theory	3		6	9	3
7012	I. T. Application/Clinical Sciences	3	12	6	21	6
		15	18	30	63	20

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
7029	Medical Assisting Procedures 1	3		6	9	3
7009	I. T. Theory & Clinical Practice 1	3	12	6	21	6
7010	I. T. Theory & Clinical Practice 2	3	12	6	21	6
		9	24	18	51	15

Service Technologies

- Cosmetology
 - Early Childhood Assistant
 - Fire Science
- Public Administration
 - Telecommunications Technology



COSMETOLOGY

Rapid technological changes have altered the occupational role of the individual employed in the field of cosmetology and have necessitated reappraisal of the training, education, and personal qualifications necessary to meet the higher standards of performance presently demanded. To be eligible to take cosmetology, a student must be a high school graduate, 16 years of age or older, with a satisfactory medical report and with sufficient school and character references. Upon successful completion of 1000 hours of training in a 9-month period required by the Massachusetts Board of Cosmetology, the student is ready to take the National Board Examination. To qualify for a license, the cosmetologist must pass an examination in both theory and practice.

Cosmetologists provide a variety of beauty services, most of which are related to the care of hair. They shampoo, cut, set, style, straighten, bleach and tint hair and give permanent waves. They also may give manicures, scalp and facial treatments, provide make-up analysis, shape eyebrows, and clean and style wigs and hairpieces. Other duties include making appointments for patrons, cleaning their equipment, and sanitizing implements.

Numerous job opportunities exist for graduates of the Cosmetology program. Employers today, however, demand more than technical proficiency. Reliability, dedication to duty, and good health are also required.

COSMETOLOGY

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
5028	Beauty Salon Management	2		4	6	2
7061	Anatomy & Physiology 401	3		6	9	3
7004	Sterilization/Sanitation	1		2	3	1
7059	Visual Poise & Charm	1		2	3	1
7045	Manicuring 1		2		2	1
7053	Hair Coloring		6		6	3
7050	Cold Waving		8		8	4
7043	Scalp Treatment 1		2		2	1
7052	Hair Shaping		2		2	1
7051	Basic Styling Techniques		4		4	2
7047	Facial/Make-up		2		2	1
7056	Shampoo/Rinses		2		2	1
		7	28	14	49	21

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
4071	Human Relations at Work 1	1		2	3	1
7048	Rudiments of Cosmetic Dermatology	2		4	6	2
7005	Light Therapy	1		2	3	1
7046	Manicuring 2		2		2	1
7054	High Fashion Toning		8		8	4
7049	Curl Control Techniques		8		8	4
7044	Scalp Treatment 2		2		2	1
7057	Style Shaping		2		2	1
7055	Artistic Hair Styling		2		2	1
7058	Therapeutic Facials-Contour Make-up		2		2	1
7060	Wig Styling		2		2	1
		4	28	8	40	18





EARLY CHILDHOOD ASSISTANT

Designed to meet the ever expanding needs for trained personnel in the field of early learning and child care, the Early Childhood Assistant program provides both general education studies and specific skills gained through class and laboratory experiences.

Graduates of the two-year program will be prepared to assist teachers and other professionals in nonpublic, preschool contexts such as nursery schools, private kindergartens, health care agencies, institutions and other schools and organizations offering early learning programs and/or child care services. The trained assistant will play an important role as a supportive member of the professional team involved in the daily care, development and education of the young child.

EARLY CHILDHOOD ASSISTANT

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
3085	Natural History	2	3	4	9	3
7101	Intro. to Early Childhood Education	3		6	9	3
7102	Child Growth & Development	3		6	9	3
8095	Music for Early Childhood Education	3		6	9	3
		14	3	28	45	15

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
4086	General Psychology	3		6	9	3
7103	Theories of Child Growth & Development	3		6	9	3
7104	Curriculum for Open Education 1	3		6	9	3
4008	Introduction to Sociology 1	3		6	9	3
		15		30	45	15

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
1007	Fundamentals of Speech	3		6	9	3
4009	Introduction to Sociology 2	3		6	9	3
7106	Survey of Current Early Learning Prog.	3		6	9	3
7107	Obser. & Recording of Child Behavior	3		6	9	3
7105	Curriculum for Open Education 2	3	3	6	12	4
		15	3	30	48	16

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
7108	Dynamics of Childhood Behavior	3		6	9	3
7109	Supervised Student Practicum		18		18	6
7110	Seminar & Critique	3		6	9	3
8101	Early Childhood Art Education	3		6	9	3
		9	18	18	45	15

FIRE SCIENCE



The firefighter's world is a constant challenge of civil strife, chemicals, plastics, and tactical decisions influencing lives, homes, industries, and often the entire economic stability of a community. To cope with these demands, the firefighters need professional training.

The student has an opportunity to major in different areas of fire science, primarily firefighting, management, and insurance. The program is designed primarily to meet the needs of in-service firefighters serving the fire departments in the Connecticut Valley. Students who successfully complete all course requirements receive an Associate Degree in Fire Science.

FIRE SCIENCE

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
2331-34	College Algebra & Trigonometry 1	3		6	9	3
3319	Integrated Science 1	3	1	8	12	4
9770	Introduction to Fire Protection	3		6	9	3
9775	Building Construction	3		6	9	3
		15	1	32	48	16

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro to Literature	3		6	9	3
3320	Integrated Science 2	3	1	8	12	4
9773	Fund. of Fire Prevention	3		6	9	3
9504	Hazardous Materials	3		6	9	3
	Elective	3		6	9	3
		15	1	32	48	16

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
9774	Fire Hydraulics	3		6	9	3
	Elective (Social/Behavioral)	3		6	9	3
9780	Organization & Mgmt. of Fire Depts.	3		6	9	3
	Elective	6		12	18	6
		15		30	45	15

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
9778	Fire Protection Systems	3		6	9	3
1008	Technical Report Writing or Speech	3		6	9	3
9776	Fire Fighting Tactics & Strategy	3		9	12	3
	Elective	6		12	18	6
		15		33	48	15

LAW ENFORCEMENT



A Police Science Program is offered for students desiring to develop a career in Law Enforcement. In addition, there is opportunity for in-service police officers who are desirous of improving their knowledge and abilities through study of specific Police Science courses and various general education subjects.

The objective of this two-year program is to familiarize the student with legal, technical, and practical aspects of police procedures. The ever increasing crime rate, changing social order, changes in the criminal laws and major court decisions are all factors that have made the law enforcement officers' role one of extreme importance and ever increasing complexity in modern society. Toward this end, the student will be provided with a strong background in the basic administration of justice as well as a general knowledge of the constitutional safeguards as afforded in the Bill of Rights. This program also includes study in the social science area and a general choice of electives.

In-service personnel may be eligible for federal grants under the Law Enforcement Education Program (LEEP), which began operation in 1969 following passage of the Omnibus Crime Control and Safe Streets Act of 1968.

LAW ENFORCEMENT

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
4008	Introduction to Sociology 1	3		6	9	3
9754	Criminal Procedures 1	3		6	9	3
9761	Introduction to Criminal Justice	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
4009	Introduction to Sociology 2	3		6	9	3
9764	Criminal Procedures 2	3		6	9	3
9771	Criminal Law 1	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
4086	General Psychology	3		6	9	3
4083	Introduction to Political Science 1	3		6	9	3
9756	Criminal Evidence 1	3		6	9	3
9755	Criminal Investigation	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
	Elective	3		6	9	3
4087	Prin. of Normal/Abnormal Behavior	3		6	9	3
9766	Criminal Evidence 2	3		6	9	3
9769	Law Enforcement Management & Planning	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

PUBLIC ADMINISTRATION



This Associate Degree program in Public Administration offers students at Springfield Technical Community College academic and practicum preparation in the principles, theory, and practice of public administration. It is particularly designed to: (1) prepare students for a career in government service and community service; and (2) to upgrade current government employees.

The staff and faculty of the College are proud of the opportunity to be one of the first community colleges in the New England area to institute a career- oriented program in Public Administration.

PUBLIC ADMINISTRATION

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
4014	Economics 1	3		6	9	3
4081	History of U. S. 1	3		6	9	3
4083	Intro. to Political Science 1	3		6	9	3
4106	Contemporary Social Issues	3		6	9	3
		15		30	45	15

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
4082	History of U. S. 2	3		6	9	3
4015	Economics 2	3		6	9	3
5075	Principles of Organization	3		6	9	3
1005	Composition 2: Intro. to Literature	3		6	9	3
5076	Intro. to Public Administration	3		6	9	3
		15		30	45	15

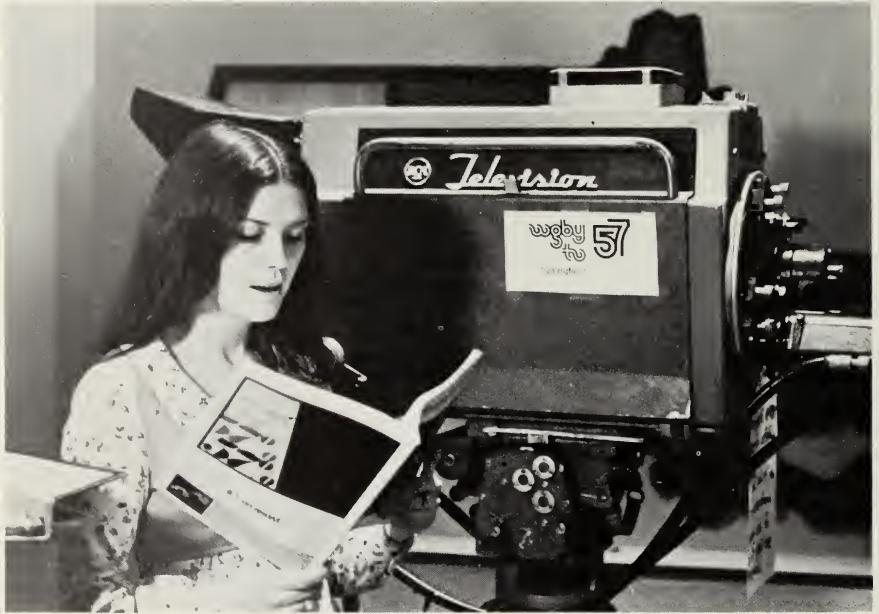
Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
5077	Administrative & Municipal Law	3		6	9	3
5078	Public Personnel Administration	3		6	9	3
4105	Organizational Psychology	3		6	9	3
5079	State Government	3		6	9	3
5080	Municipal Government	3		6	9	3
		15		30	45	15

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
5081	Public Relations	3		6	9	3
5082	Municipal & State Fin. & Budget Admin.	3		6	9	3
5083	Labor Management Relations	3		6	9	3
5084	Municipal & Regional Planning	3		6	9	3
5085	Public Admin. (Quantitative Analysis)	3		6	9	3
1007	Fundamentals of Speech	3		6	9	3
		18		36	54	18

TELECOMMUNICATIONS TECHNOLOGY



This Associate Degree program is designed to provide students with an excellent opportunity to pursue a viable career in mass media communications. Graduates of this program will qualify for production, engineering, programming, or managerial positions in local radio and television stations, cable television stations, and on the network level.

TELECOMMUNICATIONS TECHNOLOGY

Broadcast Engineering

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
	Mathematics 2311,12,13	3		6	9	3
6018	Fundamentals of Electricity 311	3	3	6	12	4
1007	Fundamentals of Speech	3		6	9	3
6290	Current Radio & Tele Broadcasting	3		6	9	3
6291	Broadcast Lab		1		1	1
		15	4	30	49	17

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
4008	Introduction to Sociology 1	3		6	9	3
	Mathematics 2321,22,23	3		6	9	3
4014	Economics 1	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
6241	Prog. Engineering Graphics Mod. 1		3		3	1
3012	Physics 1		6		12	4
1008	Technical Report Writing	3		6	9	3
2331	Mathematics	3		6	9	1
6035	Semiconductor Circuits 1	3		6	9	3
6296	Internship (Radio)		1		1	1
		9	10	24	43	13

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
3013	Physics 2	3	3	6	12	4
6297	Communications	3		6	9	3
6298	Internship (Television)		1		1	1
2009	Math 16 Computer Logic	3		6	9	3
6307	FCC License Preparation	3		6	9	3
6038	Ultra High Frequency Techniques	3		6	9	3
		15	4	30	49	17

TELECOMMUNICATIONS TECHNOLOGY

Radio Broadcasting

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
	Mathematics 2311,12,13	3		6	9	3
6018	Fundamentals of Electricity 311	3	3	6	12	4
1007	Fundamentals of Speech	3		6	9	3
6290	Current Radio & Tele Broadcasting	3		6	9	3
6291	Broadcast Lab		1		1	1
		15	4	30	49	17

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
4008	Introduction to Sociology 1	3		6	9	3
	Mathematics 2321,22,23	3		6	9	3
4014	Economics 1	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
5047	Financial Statement Analysis	3		6	9	3
6299	Broadcast Journalism	3		6	9	3
6300	Radio & Television Announcing		1		1	1
6301	Broadcast Station Operation & Maint.	3		6	9	3
6306	Audio Production — Direction	3		6	9	3
		12	1	24	37	13

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
6296	Internship (Radio)		1		1	1
5050	Principles of Management	3		6	9	3
6303	Principles of Advert, Brdcsting, Sales	3		6	9	3
6304	Advanced television Prod. & Direction	3		6	9	3
6305	Broadcast News & Public Affairs	3		6	9	3
2016	Statistics	3		6	9	3
		15	1	30	46	16

TELECOMMUNICATIONS TECHNOLOGY

Television Production

Semester 1

No.	Course Title	Class	Lab	Prep	Units	Credits
1004	English Composition 1	3		6	9	3
	Mathematics 2311,12,13	3		6	9	3
6018	Fundamentals of Electricity 311	3	3	6	12	4
1007	Fundamentals of Speech	3		6	9	3
6290	Current Radio & Tele Broadcasting	3		6	9	3
6291	Broadcast Lab		1		1	1
		15	4	30	49	17

Semester 2

No.	Course Title	Class	Lab	Prep	Units	Credits
1005	Composition 2: Intro. to Literature	3		6	9	3
4008	Introduction to Sociology 1	3		6	9	3
	Mathematics 2321,22,23	3		6	9	3
4014	Economics 1	3		6	9	3
	Elective	3		6	9	3
		15		30	45	15

Semester 3

No.	Course Title	Class	Lab	Prep	Units	Credits
5047	Financial Statement Analysis	3		6	9	3
6299	Broadcast Journalism	3		6	9	3
6300	Radio & Television Announcing		1		1	1
6301	Broadcast Station Operation & Maint.	3		6	9	3
6302	Television Production & Direction	3		6	9	3
		12	1	24	37	13

Semester 4

No.	Course Title	Class	Lab	Prep	Units	Credits
6298	Internship (Television)		1		1	1
6303	Principles of Advert., Brdcsting, Sales	3		6	9	3
5050	Principles of Management	3		6	9	3
6304	Advanced Tele. Production & Direction	3		6	9	3
2016	Statistics	3		6	9	3
6305	Broadcast News & Public Affairs	3		6	9	3
		15	1	30	46	16



Commencement Exercises

LANGUAGES

— 1000 SERIES —



1100 — Reading and Study Skills

A course designed to improve those reading deficiencies not generated from physical or perceptual handicaps, as well as to introduce those skills necessary for college work. In the area of comprehension, such abilities as seeing logical thought patterns and finding main ideas in writing will be developed. The area of Vocabulary will enlarge the student's working vocabulary and expand his ability to deal with words through the study of word structures, families and meanings. Finally, Study Skills will introduce the student to such skills as outlining, summarizing, textbook use, note-taking, reviewing, and time allotment.

3 credits

1101 — Introduction to College English

A course intended to aid the student in the orderly and clear expression in writing of his thoughts and experiences, and to offer a review of the basic elements of composition such as spelling, grammar, punctuation, diction, sentence structure, and paragraphing. Emphasis on the formulation of the thesis statement and on the understanding and use of patterns of organization and development. Reading and study of contemporary expository essays as models for student writing. Frequent theme assignments.

3 credits

1001 — Introduction to College English — Reading

General development program for building English Skills.

No credit

1002 — Introduction to College English — Writing

General development program for building English skills.
PREREQUISITE: 1001

No credit

1004 — English Composition 1

The mechanics of writing, of functional grammar, and of documentary techniques. Weekly composition of expository and argumentative themes, supplemented by illustrative readings. Study of the short story and the writing of critical and analytical themes. Research paper.

3 credits

1005 — English Composition — Introduction to Literature

A continuation of the work of English 1004. Study of other literary forms: fiction, poetry, and drama. Weekly composition of critical and analytical themes. PREREQUISITE: 1004

3 credits

1128 — Advanced English Composition 1 — Ideas for Exposition

Reading, analysis and writing of expository, descriptive and argumentative prose of an advanced nature. Research paper required. Open by examination or permission of English Department faculty. (In lieu of English Composition I)

3 credits

1129 — Advanced English Composition 2 — Introduction to Creative Writing

Reading and critical analysis of the major literary forms — fiction, drama, and poetry. Continued writing of an advanced nature. Open by examination or permission of English Department. (In lieu of English Composition 2)

3 credits

1006 — Business English

This course is designed for all secretarial students to prepare them to assume their responsibility in the business office in the communications area, both written and oral. The course covers the use of words with precision and variety; a reinforcement of the principles of grammar, particularly those with a direct bearing on the student's proficiency in writing; mechanics of style — punctuation, capitalization, abbreviations, and expression of numbers; and the development of listening and reading skills.

The students will have practice in writing letters of application, resume and follow-up letters; memorandums, reports, telegrams, and minutes of meetings, as well as various business letters including letters of request, response, claim and adjustment, credit and collection, sales, public relations, and social-business. The course meets 3 hours per week.

3 credits

1007 — Fundamentals of Speech

An introductory course designed to assist the student to improve in oral communication skills. Speech assignments are designed to acquaint the student with the importance of organization, the principle of clarity, and the tools of interest and persuasion.

3 credits

1020 — Advanced Speech

Advanced techniques in the art of public speaking and group discussion. Attention will be paid to listening techniques and parliamentary procedures. The art and techniques of debating will also be introduced.

3 credits

1008 — Technical Report Writing

The instruction has been organized to emphasize methods and centers on the writing process. Special emphasis has been placed on the factors which the report writer must consider and the processes he must follow in writing a report. The student learns the techniques of analysis of the writing situation, methods of investigation of the problem, the functional organization of the report itself, and the writing of the report to the preparation of the final copy.

3 credits

1009 — World Literature 1

A survey of the outstanding literature of the Western World from Homer to the Renaissance.

3 credits

1010 — World Literature 2

A continuation of World Literature 1, extending from the Renaissance to modern literature. PREREQUISITE: 1009

3 credits

1012 — English Literature 1

A survey of major British writers dealing with the major trends in English literature from Chaucer through the Neo-Classical age and stressing the history and development of English literature.

3 credits

1019 — English Literature 2

A continuation of English Literature 1, extending from the Romantic Period through Modern British literature to T.S. Eliot.

3 credits

1013 — American Literature

A study of selected major writers from Emerson to the present with intensive analyses of Thoreau's *Walden*, Twain's *Huckleberry Finn*, Whitman's poems, at least one modern novel, and the works of several modern poets.

3 credits

1014 — Library Science 1

An introduction to the history of libraries and to the place of the library in American society. A survey of the different types of libraries: public, special, governmental, school, and college; the importance of inter-library cooperation, regional centers and automation; history of books and printing; opportunities in the field of library work.

3 credits

1015 — Library Science 2

A study of the basic tools and methods of locating information in a library: the card catalog, indexes, encyclopedias, dictionaries, atlases, vertical files, government documents, and important reference books.

3 credits

1018 – Children's Literature

The study of fiction, non-fiction and poetry available for use by future teachers of elementary and intermediate grades. The course includes: the establishing of criteria for worthwhile books for children; a brief history of children's literature; reading of children's classics, both old and new; an analysis of illustrations for children's books; types of literature available. PREREQUISITE: English 1004 or 1005

3 credits

1104 – The Literary Contributions of Black Americans: A Survey

Examines representative literary works by Black Americans. Included are novels, short stories and poetry. Emphasis is placed upon an investigation and discussion of the significance of "The Black Experience" in order to comprehend or understand the literature in question. Open by permission only.

3 credits

1105 – A Survey of Major American and European Poets

Examines representative works of poetry from various literary periods. The major poets of America and Europe are studied and discussed. The course gives particular attention to the art of poetry as a literary genre.

3 credits

1107 – Survey of Major American and European Novels

Examines representative novels from various literary periods. The major novelists of America and Europe are studied and discussed. The course gives particular attention to the art of the novel as a literary genre.

3 credits

1108 – Survey of Major American and European Short Stories

Examines representative short stories from various literary periods. The major short story writers of America and Europe are studied and discussed. The course gives particular attention to the art of the short story as a literary genre.

3 credits

1123 — Film Criticism

This course will encourage students to explore critically their responses to cinematic presentations. Students will grapple in essays and oral presentations with such matters as the usefulness of criticism, the possible approaches a critic may take and how a critic can best formulate and express his ideas about artistic endeavors in the medium of film. This course should provide an arena in which students new to criticism in a formal sense but long-time practitioners of informal criticism can work together to focus and sharpen their critical awareness and responses.

3 credits

1124, 1125, 1126 — College Theatre Workshop 1, 2, 3

A workshop in acting and directing. Major participation in college theatre productions or direction of a one-act play required of all participants. May be taken by qualified students, faculty and staff as a co-curricular activity without credit. Admission by permission of the instructor.

1, 2, or 3 credits

1127 — Introduction to the Theatre

Play reading and analysis, drama criticism, theatre history, forms of drama, and the process of play production studied with the aim of increasing appreciation of the theatre and enjoyment of the dramatic experience. Field trips to plays and theatres.

3 credits

1131, 1132 — English as a Second Language 1 & 2

This course is designed to assist non-American born students in the acquisition of English language skills. The course includes the mechanics of writing, a review of grammar, vocabulary, punctuation, sentence and paragraph structure, and themes. Intensive practice in writing and speaking.

6 credits

JOURNALISM

1016 — Introduction to Journalism

An introductory course designed to explore the overall area of journalism. Dealt with will be the mass communication system as it

exists today, historical background, the newspaper, and other publication forms. PREREQUISITE: English 1004

3 credits

1017 — Principles of Journalism

An extension of Introduction to Journalism, 1016, dealing in more fundamental depth with the history and ethics of the industry, the responsibilities of the press and its effect upon the public. Also provided will be direct experience in various publication forms. PREREQUISITE: English 1004 or 1005

3 credits

1110 — Introduction to Television Writing

Offers the student with considerable ability in writing an opportunity to examine the journalistic processes at work in a public broadcasting station, WGBY, on campus. Students learn to write promotional and continuity material and, in a two-hour weekly lab, assist in live broadcasts of "The Reporters," a state-wide evening news program.

3 credits

1130 — Introduction to Educational Broadcasting

Basic television and radio production. An introduction to videotape units and work in radio programming. Laboratory practice also includes gathering and writing news, editing, copy reading, as well as working in the on-campus stations.

3 credits

1084 — Elementary French 1

An introductory course designed primarily for students who have had no previous experience with the language. The course will include intensive drill in pronunciation, elementary conversation, reading, grammar, and writing in a limited context of material and vocabulary. French will be used as much as is practical. Language lab required. No prerequisites.

3 credits

1085 — Elementary French 2

A continuation of Elementary French 1. Language lab required. PREREQUISITE: Elementary French 1 or two units of French at entrance.

3 credits

1086 — Intermediate French 1

A review and continuation of the basic course aimed at giving the student control of the basic structures of the French language. In addition, an introduction to French Literature will be made through the study of selected writers. Language lab required. PREREQUISITES: 3 or 4 units of French at entrance or French 1084 and 1085

3 credits

1087 — Intermediate French 2

A continuation of Intermediate French 1. Language lab required. PREREQUISITE: 4 units of French at entrance or French 1084, 1085, and 1086.

3 credits

1106 — Introduction to French Culture and Civilization

A survey of various aspects of French life and culture, including such items as geography, family life, cultural heritage, theater, cuisine, etc., taught in English. Students will develop a rounded learning experience through inclusion of lecturers, travel, trips to museums and other architectural structures, films, exposure to foods, as well as meeting individuals from representative French countries.

3 credits

1134 — Conversational French

The approach to this community service type course is strictly utilitarian, with lessons centering about situations of immediate importance to the particular group. For the mature student who needs or has only a limited amount of time to devote to the study of a foreign language; e.g., businessmen and persons planning foreign travel. In addition to class time, library and lab facilities would be available at the student's option. Offered in 15-hour modules. Credit available would be from 1 to 6. Elective. No prerequisite.

variable credits

1136 — Practicum in French

The course is designed to make it possible for qualified students to obtain practical experience in the use of the foreign language in any tutoring or teaching assistant capacity. This could include preparation of tapes, native speaker assignments, or assistant in other aspects of the program surrounding the teaching of French courses or English as a Foreign Language. Participation must have the prior

approval of the supervising faculty member and the department chairman.

1, 2, or 3 credits

1088 — Elementary German 1

An elementary course for students who have had no previous experience with the language. Formal grammar, drill in pronunciation, oral and written compositions are required. No credit will be given unless a full year's work is completed. Language lab required.

3 credits

1089 — Elementary German 2

A continuation of German 1. Language lab required. PREREQUISITE: Elementary German 1, 1088

3 credits

1090 — Intermediate German 1

Review of elementary grammar; continued practice in oral and written composition; the reading and discussion of selected short stories, plays, and one longer work; reports on outside reading. Language lab required. PREREQUISITE: 3 units of German at entrance or 1088, 1089.

3 credits

1091 — Intermediate German 2

A continuation of Intermediate German 1. Language lab required. PREREQUISITE: 4 units of German at entrance or German 1088, 1089, and 1090.

3 credits

1092 — Elementary Italian 1

This introductory course includes phonetics, grammar, oral drill, and the reading of Italian prose at the elementary level. Language lab required.

3 credits

1093 — Elementary Italian 2

A continuation of Elementary Italian 1. Language lab required. PREREQUISITE: Elementary Italian 1092.

3 credits

1094 — Intermediate Italian 1

A review of the fundamentals of grammar will be given in this course; oral conversation and drill will also receive attention. Reading of selected works at intermediate level, as time permits. PREREQUISITE: Elementary Italian 1092 and 1093 or equivalent.

3 credits

1095 — Intermediate Italian 2

A continuation of Intermediate Italian 1. PREREQUISITE: 1092, 1093 or permission of the instructor and 1094.

3 credits

1096 — Elementary Spanish 1

This introductory course includes phonetics, grammar, oral drill, and the reading of Spanish prose of elementary level. Language lab required.

3 credits

1097 — Elementary Spanish 2

A continuation of Elementary Spanish 1. Language lab required. PREREQUISITE: 1096 or 2 units at entrance.

3 credits

1098 — Intermediate Spanish 1

A review of grammar will be given in this course; oral drill and conversation will also receive attention. The reading will be as extensive as time permits. Language lab required. PREREQUISITE: 3 units of Spanish at entrance, the passing of a placement examination given by the Foreign Studies Department, or Spanish 1096 and 1097.

3 credits

1099 — Intermediate Spanish 2

A continuation of Intermediate Spanish 1. Language lab required. PREREQUISITE: 3 units of Spanish at entrance, the passing of a placement examination given by the Foreign Studies Department or 1096, 1097. and 1098.

3 credits

1133 — Hispanic Civilization

Introduction to Spanish culture and civilization particularly as related to the Americas. Covers languages, geography, ethnic composition, religion, economy, and influences in a variety of areas including culture in terms of music, art, and literature, and a perspective of the impact this civilization has had on America in the past and present. Students will develop a rounded learning experience through inclusion of lectures, travel, trips to museums and other architectural structures, films, exposure to foods, as well as meeting individuals from representative Hispanic countries.

3 credits

1102 — Conversational Spanish

The approach to this community service type course is strictly utilitarian, lessons centering about situations of immediate importance to the particular group. For the mature student who needs or has only a limited amount of time to devote to the study of a foreign language; e.g., policemen, firemen, businessmen, adjustors, service or health employees, and persons planning foreign travel. In addition to class time, library and lab facilities will be available at the student's option. Offered in 15-hour modules. Credits available would be from 1 to 6. Elective No prerequisites.

Credit hours vary

1135 — Practicum in Spanish

The course is designed to make it possible for qualified students to obtain practical experience in the use of the foreign language. in any tutoring or teaching assistant capacity. This could include preparation of tapes, native speaker assignments, or assistant in other aspects of the program surrounding the teaching of English as a Foreign Language. Participation must have the prior approval of the supervising faculty member and the department chairman.

1, 2, or 3 credits

1111 — Directed Study in German

1112 — Directed Study in Spanish

1113 — Directed Study in French

- 1114 – Directed Study in Fine Arts
- 1115 – Directed Study in English
- 1116 – Directed Study in Literature
- 1117 – Directed Study in Music
- 1118 – Directed Study in Art
- 1119 – Directed Study in the Classics
- 1120 – Directed Study in Photography
- 1121 – Directed Study in Drama
- 1122 – Directed Study in Speech

Projects for advanced individual study by special arrangement with the instructor and approval of the Department and Division Chairmen. Students are expected to demonstrate willingness and ability to work on their own with minimal assistance.

Variable Credits 1, 2, 3

1083 – Cultural Surveys

This course provides an introduction to the people and culture of countries that have not been widely studied and, because of developing world conditions, are playing a key role in the political or cultural events of our times. Using a team teaching approach, the course covers economy and sociological patterns, cuisine, music, dress, art, etc. Appropriate field experiences and/or official materials from the countries are studied. Since the countries included in any one semester may vary, consult registration materials of the current semester. No prerequisites.

3 credits



MATHEMATICS

— 2000 SERIES —

MATHEMATICS

2001 — Independent Study Mathematics

Independent study of special topics in mathematics under the direction of an instructor. PREREQUISITE: Permission of the department chairman.

1, 2, 3, or 4 credits

2002 — Independent Study Mathematics

Continuation of 2001. PREREQUISITE: 2001 and permission of the department chairman

1, 2, 3, or 4 credits

2008 — Math 15

Rational numbers including percentage and related business problems, reductions and conversions, algebraic operations, solutions of linear equations, plane geometric figures, and an introduction to trigonometry. Restricted to Landscape and Graphic Arts students. PREREQUISITE: Math 2313 or equivalent

3 credits

2009 — Mathematics 16 Computer Logic

Introduction to classical logic, Boolean algebra, and binary arithmetic as applied to the operation of mechanical, electro-mechanical, and electronic devices. PREREQUISITE: Mathematics 2343

3 credits

2011 — Mathematics 21

The straight line, conic sections, vectors, inequalities, functions and graphs, limits and continuity, differentiation of algebraic functions, maxima/minima theory, related rates, and differentials. Equivalent to Mathematics 2350-2353. PREREQUISITE: Mathematics 2343 or two years of high school algebra and trigonometry

4 credits

2012 — Mathematics 22

The definite and indefinite integral and applications, differentiation and integration of transcendental functions, techniques of integration, parametric equations, and polar coordinates. Equivalent to Mathematics 2354, 2357. PREREQUISITE: Mathematics 21—2011

4 credits

2013 — Mathematics 23

Solid analytic geometry and vectors, infinite series including Taylor's Theorem, partial derivatives, gradient, total differential, line integrals, multiple integration, linear algebra, vector spaces, and vector products. Equivalent to Math 2358-2361. PREREQUISITE: Mathematics 22 — 2012

4 credits

2014 — Mathematics 24

Topics in differential equations, infinite series, transformations, and special functions. Equivalent to Math 2362-65. PREREQUISITE: Mathematics 23 — 2013 or its equivalent

4 credits

2015 — Statistics and Quality Control

An introduction to basic statistics. Construction and use of control charts, the use of sampling plans, and related topics. The organization of a quality control department is considered with emphasis on the functions of its components. PREREQUISITE: Mathematics 2343

3 credits

2016 — Statistics

Measures of central tendency and variability; the normal and binomial distributions; hypothesis testing; interval estimations for mean and variance; sampling techniques: correlation. PREREQUISITE: Math 2333 or Finite Math 1 (2080)

3 credits

2020 — Engineering Mathematics

Review of power series solutions of ordinary differential equations; Bessel Functions; Fourier series; Sturm-Liouville systems; Laplace transformations; elementary partial differential equations and applications; introduction to complex variables. PREREQUISITE: Math 24 (2014)

3 credits

2080 — Finite Mathematics 1

Introduction to symbolic logic; set algebra; permutations; combinations; binomial theorem; probability. PREREQUISITE: Two years of high school algebra or Math 2323

3 credits

2081 — Finite Mathematics 2

Markov Chains; vectors; matrices; linear programming; Simplex Method; functions, relations, and graphs. PREREQUISITE: Finite Mathematics 1 (2080)

3 credits

2082 — Analytic Geometry and Calculus 1

Introduction to analytic geometry, functions, limits, and derivatives. Differentiation of algebraic functions and applications. PREREQUISITE: Mathematics 2343 or its equivalent

3 credits

2083 — Analytic Geometry and Calculus 2

Integral calculus and applications; functions of several variables; partial differentiation; solid analytic geometry; vectors. PREREQUISITE: Mathematics 2082

3 credits

2084 — Mathematics of Radiology

Numbers; decimals; fractions; ratios; trigonometry; logarithms; basic slide rule operations. This course is a prerequisite for Radiologic Physics 1. PREREQUISITE: One year of high school algebra or Math 2313

3 credits

2085 — Analytic Geometry

Functions and graphs; the straight line, conic sections;

transformation of coordinates; polar coordinates; solid analytic geometry; vectors; cylindrical and spherical coordinates. PREREQUISITE: Two years of high school algebra and trigonometry or Mathematics 2343

3 credits

2086 — Calculus 1

Functions; limits; continuity; differentiation of algebraic functions and applications; integration and applications. PREREQUISITE: Analytic Geometry (2085)

3 credits

2087 — Calculus 2

Transcendental functions; techniques of integration; functions of several variables. PREREQUISITE: Calculus 1 (2086)

3 credits

2088 — Calculus 3

Partial differentiation; multiple integrals; infinite series; matrices and determinants. PREREQUISITE: Calculus 2 (2087)

3 credits

2089 — Linear Algebra

Geometric vectors; vector spaces; systems of linear equations; inner product spaces; linear transformations and matrices; determinants; Eigenvalues and Eigenvectors isometrics; linear and bilinear forms. COREQUISITE: Calculus 3 (2088) or mathematics 23 (2013), PREREQUISITE: Calculus 2 (2087) or mathematics 22 (2012)

3 credits

2090 — Differential Equations

Types and applications of differential equations of the first order; integral curves; linear differential equations with constant coefficients; applications. PREREQUISITE: Calculus 3 (2088)

3 credits

2301 — Mathematics

The concept of whole numbers and the place value system. Addition, subtraction, multiplication and division of whole numbers. Exponents, perfect square, square roots, primes, composites, and prime factoring.

1 credit

2302 — Mathematics

Fractions and decimals. Addition, subtraction, multiplication and division of both fractions and decimals. Reducing fractions and converting fractions to decimals. PREREQUISITE: 2301 or its equivalent

1 credit

2303 — Mathematics

Changing percentage to fractions and fractions to percentage. The solution of the various types of percentage problems. An introduction to denominate numerals. Elements of plane geometry. PREREQUISITE: 2302 or its equivalent

1 credit

2311 — Mathematics

The relationship of whole numbers to sets, numerals to numbers. Binary operations of addition, subtraction, multiplication and division. Solutions to simple linear equations. Five fundamental properties of equations. PREREQUISITE: 2303 or its equivalent

1 credit

2312 — Mathematics

Axioms and properties of whole numbers, the five properties of exponents, and the addition, subtraction, multiplication and division of integers. PREREQUISITE: 2311 or its equivalent

1 credit

2313 — Mathematics

Simplifying numerical expressions containing integers, absolute values, and exponents, rational numbers, simplifying variable expressions, properties and axioms of the real number system are also included. PREREQUISITE: 2312 or its equivalent

1 credit

2321 — Mathematics

Addition, subtraction, multiplication and division of fractional expressions. Negative exponents and factoring of algebraic expressions. PREREQUISITE: 2313 or its equivalent

1 credit

2322 — Mathematics

Methods of solution of first degree and quadratic equations. Solving inequalities and fractional and absolute value equalities, quadratic equation operations with radical expressions. PREREQUISITE: 2321 or its equivalent

1 credit

2323 — Mathematics

The concept of an ordered pair and the real number plane. Methods for graphing linear, quadratic, and absolute value equations. Systems of linear equations solved analytically and graphically. Functions and relations are defined and applied. PREREQUISITE: 2322 or its equivalent

1 credit

2331 — Mathematics

Angles and their measure, Pythagorean Theorem, an introduction to right triangle trigonometry and vectors. PREREQUISITE: 2323 or its equivalent

1 credit

2332 — Mathematics

Introduction to sets, numbers systems factoring, algebraic fractions, exponents, and radicals. PREREQUISITE: 2323 or its equivalent

1 credit

2333 — Mathematics

Solution sets of linear and quadratic equations, and systems of linear equations. PREREQUISITE: 2332 or its equivalent

1 credit

2334 — Mathematics — Slide Rule

Scientific notation, slide rule, multiplication and division, ratio and proportion, square and cube roots, logarithms and trigonometric functions. PREREQUISITE: Math 2303 or its equivalent

1 credit

2341 — Mathematics

Functions and relations, linear and quadratic functions, conic sections, systems of equations, and variation. PREREQUISITE: 2333 or its equivalent

1 credit

2342 — Mathematics

Inverse functions, exponential functions, logarithmic functions, trigonometric functions and their graphs, and the laws of sines and cosines. PREREQUISITE: 2341 or its equivalent

1 credit

2343 — Mathematics

The Binomial Theorem, sequences and series, and complex numbers. PREREQUISITE: 2342 or its equivalent

1 credit

2344 — Mathematics

Limits, basic concepts of differential, calculus and applications, and basic concepts of integral calculus and applications.

1 credit

2350 — Mathematics

First and second degree equalities, inequalities, and absolute value equalities and inequalities. Graphing functions and relations in cartesian co-ordinates.

1 credit

2351 — Mathematics

Analytic geometry of the straight line and conic sections. Translation and rotation of axes in two dimensions.

1 credit

2352 — Mathematics

Limits, continuity and the derivative of algebraic functions. Chain rule of differentiation and implicit differentiation. The differential and differential approximation.

1 credit

2353 — Mathematics

Applications of the derivative. Concavity and points of inflection, maxima/minima theory, and related rates. Vector addition, scalar and vector multiplication, and vector differentiation.

1 credit

2354 — Mathematics

Indefinite and definite integration. Fundamental Theorem of Calculus. Differential equations, rectilinear motion, areas under and between curves, work, and fluid pressure.

1 credit

2355 — Mathematics

Differentiation and integration of trigonometric, inverse trigonometric, logarithm, exponential, hyperbolic and inverse hyperbolic functions.

1 credit

2356 — Mathematics

Techniques of integrating algebraic trigonometric, and hyperbolic functions. Trigonometric substitutions, integration by parts; the method of partial fractions and completing the square.

1 credit

2357 — Mathematics

Applications of the definite integral. Volumes of solids of revolution by the disk and shell methods, arc lengths, and surface areas of revolution. Centers of masses of volumes, areas and arc lengths. Improper integrals, parametric equations and polar co-ordinates.

1 credit

2358 — Mathematics

Solid analytic geometry and multiple integration. Double integrals in rectangular and polar co-ordinates, and triple integrals in rectangular, cylindrical, and spherical co-ordinates. Lines, quadratic surfaces and vectors in three dimensions.

1 credit

2359 — Mathematics

Convergent and divergent infinite and power series. Taylor's and Maclaurin's series. Computations with series including differentiation and integration.

1 credit

2360 — Mathematics

Partial differentiation and the total differential. Maxima/minima problems using Lagrange multipliers. Relationship

between line, surfaces, and volume integrals using Green's, Gauss', and Stokes' Theorem.

1 credit

2361 — Mathematics

Elements of linear algebra. Matrices and determinants, solution of a system of simultaneous equations.

1 credit

2362 — Mathematics

Ordinary differential equations and their nomenclature. Various methods of solving linear and non-linear first order differential equations.

1 credit

2363 — Mathematics

A study of linear higher order ordinary differential equations. The differential operator technique is used for solving homogeneous differential equations with constant coefficients. The method of undetermined coefficients, D'Alembert's reduction of order technique, and variation of parameters are used for solving non-homogeneous differential equations.

1 credit

2364 — Mathematics

Laplace Transform and its use in solving linear ordinary differential equations. The Gamma, Pulse, and Impulse functions.

1 credit

2365 — Mathematics

Use of power series to solve linear ordinary differential equations. Bessel functions and Bessel's differential equation; Legendre Polynomials and Legendre's differential equation.

1 credit

SCIENCE

— 3000 SERIES —



BIOLOGY

3027 — Practical Asepsis

This course is designed for students enrolled in the Operating Room Technicians program. It deals only with those aspects of microbiology of concern to operating room technicians, such as asepsis and practical aspects of medical microbiology. This course is not transferable. It is only open to ORT students. There are no prerequisites.

3 credits

3028 — Microbiology

A basic study of micro-organisms, their activities, destruction, and control. The concepts of infection, immunity, and hypersensitivity precede the survey of the microbiology of major infectious diseases. PREREQUISITES: High School Chemistry and Biology.

4 credits

3051 — Independent Biology Study 1

Independent study or laboratory project in biology under the direction of an instructor. PREREQUISITE: Permission of the Department Chairman.

4 credits

3052 — Independent Biology Study 2

Continuation of 3051. PREREQUISITE: 3051 and permission of the Department Chairman.

4 credits

3077 — Human Biology 1

This course is an integration of anatomy, physiology and clinical laboratory procedures that will prepare medical assistants to aid the physician in his diagnosis and treatment of a patient's illness.

A comprehensive study is made of the structure and function of the human body. The course emphasizes the study of cells and tissues as related to the skeletal, muscular, respiratory and circulatory systems.

Clinical laboratory procedures stressed in Human Biology 1 and Human Biology 2 are: Hematology, Simple Microbiology, Immunology, Urinalysis, Basal Metabolism, and other routine chemical tests. Open to Medical Assistants and Medical Secretaries only.

4 credits

3078 — Human Biology 2

This is a continuation of Human Biology 1. This program includes the nervous, endocrine, digestive and genito-urinary systems, and their relationships to total body organization. PREREQUISITE: 3077 — Human Biology 1

4 credits

3079 — Introductory Zoology

This course is designed for students who need one semester of a laboratory science to fulfill their program requirements.

The course introduces the principles of zoology including cell structure and function; the physiology, heredity, development, behavior and evolution of animals and is supplemented by laboratory examination of the anatomy of the major groups in the animal kingdom. No prerequisites

4 credits

3080 — General Biology 1

The study of chemical and cellular similarities in living organisms emphasizing the basic unity of life. General morphology and physiology of plants and animals are discussed with emphasis on the vascular plant and the human organ systems. PREREQUISITES: High School biology and chemistry.

4 credits

3081 — General Biology 2

Modern concepts in animal behavior, genetics, population, biology, ecology, and evolution are discussed. A survey of the plant and animal kingdoms emphasizes diversities, similarities, and possible evolutionary patterns. PREREQUISITE: 3080 — Biology 1

4 credits

3085 — Natural History

This course is designed to introduce the student to the principles of Natural History. The goal of a natural history course is to assist the student in viewing all facets of the natural environment, through selected field and laboratory experiences in Astronomy, Geology, Meteorology, Botany, Zoology and Ecology. This course may be used to fulfill program requirements for a one-semester laboratory science. No prerequisite.

3 credits

3088 — Environmental Microbiology

A general investigation of microbial structure, growth and physiology, and the reactions of micro-organisms to their physical and chemical environment. PREREQUISITE: 3002 or 3086

3 credits

3091 — Anatomy and Physiology 1

A comprehensive study of the structure and function of the human body, emphasizing the normal, which will serve as a background for the application of scientific principles both in everyday living and in the work of the various health disciplines. Laboratory practice includes the study of tissues by using microscopic examinations and the dissection of animal specimens, along with physiological experimentation. Units covered are concerned with general introductory material, the skeleton, muscles, and the nervous system. PREREQUISITES: Biology and Chemistry

4 credits

3092 — Anatomy and Physiology 2

A continuation of Anatomy and Physiology 1 concentrating on body metabolism, reproduction, and endocrine control. Laboratory sessions are included. Emphasis is placed on association, correlation, critical thinking, and overview of the body as a whole. PREREQUISITE: 3091 — Anatomy and Physiology 1

4 credits

3093 — Human Anatomy 1 (For Operating Room Technicians)

This program correlates gross and microscopic anatomy with the physiology of the human body, system by system. Stress is given to areas of special concern to the operating room technician. Three lectures, one two-hour lab

4 credits

3098 — Natural Science 1

This program has been designed for the student who has had no previous experience in the study of chemistry or biology. Major emphasis is placed on the areas of nomenclature, periodic table, atomic structure and bonding; organic chemistry and biochemistry are presented to give an interrelationship between these vital areas. No prerequisites

4 credits

3099 — Natural Science 2

This course deals with the basic physical and chemical principles essential to the understanding of molecular biology and the application of this information to the basic concepts of the biological and health sciences. The program of studies will be medically oriented. This is a laboratory course in addition to lectures. The concepts offered in this course will develop an understanding of modern Genetics, Ecology, Evolution and the human organ systems. The work covered in this program will be considered a prerequisite to further study in biology and physiology. PREREQUISITE: 3098 — Natural Science 1

4 credits

3100 — Principles of Biology 1

This course is designed to meet the needs of the student who has no background in chemistry or biology. It is offered for the benefit of future primary education teachers and for liberal arts students who do not have adequate preparation for General Biology 3080. The presentation of broad biological principles supplemented by a thorough examination of representative plants and animals will be given. No prerequisites

4 credits

3101 – Principles of Biology 2

Special emphasis is placed on human biology in terms of the universal principles that organize and regulate all life processes. Ecology, evolution, reproduction, heredity and social behavior are examined in depth. PREREQUISITE: 3100 – Principles of Biology 1
4 credits

3102 – Physio-Chemistry and Anatomy 1

This program combines the chemistry of the health sciences and anatomy and physiology. It is designed to meet the specific requirements of Dental Hygienists. The first semester is devoted primarily to health chemistry and basic anatomy and physiology of the human body including the skeleton, muscles and nervous system. PREREQUISITES: High School Chemistry and Biology. Open to Dental Hygiene only
4 credits

3103 – Physio-Chemistry and Anatomy 2

The second semester is a continuation of Physio-Chemistry and Anatomy 1 and includes topics in biochemistry, metabolism and endocrine control. Emphasis is placed on the head and neck plus an overall view of the body as a whole. PREREQUISITE: 3102 – Physio-Chemistry and Anatomy 1
4 credits

3104 – Human Anatomy for Mental Health

This course involves the examination of the various systems comprising the human body with a somewhat detailed consideration of their functions, as related to proper mental health. Particular emphasis is placed on the nervous system. Open to Mental Health students only.
3 credits

3130 – Biology of Man

This course is designed to meet the needs of the student who has no background in biological science. The presentation of basic principles of biology, genetics, and ecology are interwoven with the study of the human body. The work covered in this course will be considered a prerequisite to further study in Biology and Anatomy and Physiology. This is a one-semester program. Open to Student Development and General Studies. No prerequisites
4 credits

3132 — Human Cell Structure and Function

This course will promote an understanding of the basic units of structure and function of most of the major tissues, organs, and organ systems in the human body. The organization of cells and tissues into organs will be correlated with their overall function and importance to the organism, with emphasis on the interdependence of each organ system with each other. This course should provide a solid background for students interested in pursuing more advanced courses in Biology or in the Allied Health Sciences. PREREQUISITES: 3080, 3081 — Biology; 3100, 3101 — Biology

4 credits

3134 — Principles of Human Development

This course will provide a sound background in the fundamental growth processes of normal and abnormal human development and will give the student an understanding of some of the more subtle underlying growth mechanisms by which the adult structure is established. This course will lead the student beyond mere memorizing to a comprehension and appreciation of the structure and function of the human body, and thus provide a solid framework on which a student can pursue more advanced courses in biology or in the Allied Health Sciences. PREREQUISITES: 3080, 3081 — Biology; 3100, 3101 — Biology

4 credits

3136 — Principles of Human Genetics

The principles of Mendelian inheritance with an emphasis on its application to man. Topics discussed include genetic terminology, problem solving, human chromosomes, sex determination, sex linkage, gene action, inborn errors of metabolism, susceptibility to disease, mutations, population studies, eugenics, race, and social implication.

Purpose: To complement a psychology, sociology, or math major. To help fulfill science distribution requirements at some 4-year colleges. No Science prerequisite necessary

3 credits

BOTANY

3021 — Botany 1

An introductory course in general botany which provides an understanding of the structure and growth of plants. Points stressed are physiology, reproduction, and ecological considerations. Two hours lecture, one two-hour lab.

3 credits

3022 — Botany 2

A course dealing in tree identification and use, as related to landscape work. Important types, both native and introduced, are discussed. Limited to trees generally hardy in the the New England area. Representative types are discussed in detail during laboratory sessions. Lectures deal with general topics concerning tree use. Field trips, both on and off campus, are used to view the trees discussed. One hour lecture, two two-hour labs.

3 credits

3023 — Botany 3

A continuation of Botany 2, covering the identification and use of the commonly used native and introduced shrubs and vines in this area. Emphasis is placed upon the best use of the types involved. Lectures are concerned with utilization of plant features such as flowers and fruits, and with effects of the environment on the plants discussed. Laboratories are used for the discussion of specific plants. One hour lecture, two two-hour labs.

3 credits

3024 — Botany 4

The study and identification of turf grasses as used in the New England area. Much emphasis is placed upon the cultural requirements of the grasses involved. Topics in lectures include soil and fertilizer requirements, drainage and irrigation, best turf types, grass and seed indentification, maintenance and renovation, and disease and insect control. The laboratories are involved in soil testing, turf growing, maintenance techniques and field trips. Two hours lecture, one two-hour lab.

3 credits

CHEMISTRY

3002 — Chemistry 1

A study of the fundamental principles of chemistry in relation to the properties, composition and structure of matter. Descriptive chemistry is included to introduce the subject as an empirical laboratory science. A primary aim of the course is to develop an understanding of nuclear, atomic, molecular and solid state structure in preparation for subsequent courses in material science, graphic arts chemistry, automotive chemistry and the chemistry of fuels and water. Laboratory. Three-hour lecture per week. One three-hour lab. PREREQUISITES: Concurrently 2331-2334 Math and one year of High School Physical Science

4 credits

3003 — Chemistry 361

Topics in chemistry relating to the graphic arts including photography and photographic processes, colors, inks, and printing. Laboratory.

4 credits

3004 — Chemistry 20

A study of topics in chemistry relating to the needs of students in the health sciences. The basic concepts of chemistry are explored with emphasis placed on the elementary organic and biological chemistry. Laboratory. PREREQUISITE: 3002 — Chemistry, 1-3 one hour lectures per week, one three-hour lab

4 credits

3005 — General Chemistry 21

An introductory course in general chemistry designed to parallel the first year chemistry courses offered at universities for science and engineering students. Modern theories of chemical reactions, chemical bonding, atomic and molecular structures are emphasized. Three one-hour lectures per week, one three-hour lab. PREREQUISITES: One year of High School Physical Science and 2334 — Math or equivalent

4 credits

3106 – Organic Chemistry

A one semester survey course in organic chemistry at the university level. Reactions, synthesis and properties of organic compounds will be emphasized. Mechanisms of organic reactions and the structure of organic molecules will be studied. Laboratory. Three one-hour lectures per week, one three-hour lab. PREREQUISITE: 3006 – Chemistry 22 or permission of instructor

4 credits

3109 – General Chemistry 101

A one-year general chemistry course for students in the Health Sciences and for transfer students who do not wish to major in a science or engineering. The first semester of the course will consist of a study of the general principles of inorganic chemistry, stressing concentration, dilution, equilibrium and descriptive chemistry. Three one-hour lectures per week, one 3-hour lab. PREREQUISITES: 2321-22-23 – Math and 1 year of High School laboratory science or permission of instructor

4 credits

3110 – General Chemistry 102

The second semester will concentrate on organic and bio-chemistry. PREREQUISITE: 3109 – General Chemistry 101. Three one-hour lectures per week, one three-hour lab.

4 credits

3111 to 3118 – General Chemistry 21 & 22 Module Program

3111 – Module 1

Units and conversions, atomic structure, atomic weight, mole concept, balancing equations, theoretical yields.

3112 – Module 2

Gases, pressure, Boyle's, Charles', Guy Lussac's & Dalton's Laws, Ideal & real gases, kinetic theory.

3113 – Module – 3

Periodic Table, electronic configuration of atom, quantum theory, bonding molecular geometry and Bonding.

3114 — Module 4

Physical properties in relation to structure, changes in states, solutions.

3115 — Module 5

Equilibrium.

3116 — Module 6

Thermodynamics and rates of reaction.

3117 — Module 7

Acids and Bases.

3118 — Module 8

Oxidation—Reduction—Introduction to organic chemistry.

PREREQUISITES: Same as Chemistry 21. Each module includes 4 laboratories which must be completed before next module can be started.

1 credit per module

3120 — Biochemistry

A one-semester course in biochemistry on the university level. The structure, properties and reactions of biological compound will be studied. Lecture: three credits, three one-hour lectures per week; Separate Lab: one credit, one three-hour lab per week. Lecture may be taken without laboratory. PREREQUISITE: 1 semester of organic chemistry or permission of instructor

4 credits

3125 — Organic Chemistry 1

A one-year course in organic chemistry at the university level. Reaction, synthesis and mechanism of organic reactions will be studied. This course is designed for transfer students with majors in chemistry, biology, pre-med or pre-dental. Three three-hour lectures per week; Separate Lab: Credits: One-four hour lab per week; lecture may be taken with no lab. PREREQUISITE: 3006 — Chemistry 22, or permission of instructor

4 credits with lab
3 credits without lab

3126 — Organic Chemistry 2

A continuation of 3125.

4 credits with lab
3 credits without lab

3128 — Quantitative Analysis

An introductory course in quantitative methods of analysis. Gravimetric, Laboratory volumetric and colormetric methods will be used primarily. PREREQUISITES: 3006 — Chemistry 22 and 2334 — Math or permission of the instructor. Lecture: Two one-hour lecture/lab; Two three-hour labs per week

4 credits

ENVIRONMENTAL TECHNOLOGY

3089 — Chemistry of Liquid Wastes

An investigation of the chemistry of community and industrial liquid wastes, their effect on waste treatment processes and the test procedures required for treatment plant operation. It includes such topics as color, turbidity, pH, hardness, mineral content, dissolved oxygen, BOD, COD, greases, volatile acids and toxic metals. PREREQUISITE: 3087, two lecture hours, one three-hour laboratory

3 credits

3094 — Environmental Science

An introduction to environmental pollution, its effect on man and other living things and the basic principles of sanitation, treatment and control. It includes a discussion of the major pollutants of air, water and land: sewage and industrial waste composition; disease transmittal; control methods and air and water quality standards. Three lecture hours.

3 credits

3095 — Water Sampling and Analysis

A study of the techniques and equipment involved in obtaining and analyzing water samples. It includes such topics as stream studies, solids, dissolved oxygen, chemical oxygen demand, biological oxygen demand, turbidity, color, pH, alkalinity, hardness, halogens and nitrates. Analysis will include both wet chemistry and instrumental analysis such as colorimetry, spectrophotometry and chromatography. PREREQUISITE: 3087 One lecture hour, two three-hour labs

3 credits

PHYSICS

3010 — Physical Science 1

Fundamental principles of physical science: force, motion, and energy; facts, theories and laws; the scientific method; the conservation of energy, the gas laws, and the beginning of chemistry.

4 credits

3011 — Physical Science 2

Chemical reactions and equations, the periodic table; electricity, magnetism and electromagnetic radiation; atomic structure, the origin of light, electronic configuration and chemical bonding; solution chemistry and carbon chemistry; the earth's crust, fundamental geological processes, and radioactivity.

4 credits

3012 — Physics 1

A study of mechanics, properties of matter, wave motion, heat, and sound. Lectures, demonstrations, problem assignments, and laboratory work are given in the following fields: systems of measurement, accelerated motion, momentum, moment of inertia, resolution and composition of forces, elasticity and properties of matter, pneumatics and hydrostatics, machines and energy, harmonic motion and wave motion, heat energy and heat transfer, thermal properties, thermodynamics, and heat engines. PREREQUISITE: 2331 — Math

4 credits

3013 — Physics 2

A study of magnetism, electricity, and light. Lectures, demonstrations, problem assignments, and laboratory work are carried on in the following fields: electrostatics, magnetism, resistance of conductors, Ohm's law, thermoelectricity, electrochemistry, electromagnetic induction, radio, illumination, mirrors, lenses, optical instruments, radiant energy, spectroscopy, polarization, and recent discoveries in physics. PREREQUISITE: 3012

4 credits

3014 — Physics 14

Physics of solutions and gases, electricity, and principles of hypo and hypothermia. PREREQUISITE: 2323 — Math

4 credits

3015 — Physics 21

Elementary mechanics, statics, and dynamics; conservation of energy and momentum; conservation of angular momentum, heat and simple harmonic motion. PREREQUISITE: 2353 — Math

5 credits

3016 — Physics 22

A continuation of Physics 21 covering sound, light, electricity, and magnetism; Gauss, Ampere, and Faraday's Laws; electric and electromagnetic properties of materials; magnetic and electric circuits. PREREQUISITE: 3015, 2357

5 credits

3017 — Physics 23

Electromagnetic waves, Maxwell's equations, introduction to relativity, atomic, nuclear and particle physics. PREREQUISITES: 3016, 2361

5 credits

3019— Thermodynamics 1

Designed to acquaint the student with an understanding of the fundamental thermodynamic properties and relationships involved in all heat devices. The topics included are: energy, energy relations, the ideal gas, and the processes with application to ideal gases. PREREQUISITE: 2323

3 credits

3020 – Thermodynamics 2

Completes the study of the fundamental thermodynamic properties and covers the description, classification, and analysis of steam power cycles. The topics included are: cycle analysis and reversible cycles, entropy and the second law, power from steam, the generation of power, and cycles for modern steam plants. PREREQUISITE: 3019

3 credits

3031 – Physics 11

An introductory course covering fundamental concepts of mechanics, heat, and sound. Laboratory. PREREQUISITE: 2331

4 credits

3032 – Physics 12

A continuation of Physics 3031, which is a prerequisite. Laboratory.

4 credits

3033 – Introductory Physical Science 1

Study of properties of solids, liquids, and gases, including density – thermal-expansion, boiling and freezing points, and temperature dependence of solubility. Very frequent experiments. Emphasis on developing initiative, self-reliance and ability to apply physical and mathematical reasoning.

4 credits

3034 – Introductory Physical Science 2

Separation by fractional crystallization, distillation, and electrolysis. Synthesis and law of constant proportion. Spectra. Radioactivity, change and fluctuations of atomic processes. Exponential decay. Atomic model of matter. Compounds, size of molecules and molecular motion.

4 credits

3041 – Independent Study – Physics 1

Independent study or laboratory project in physics under direction of instructor. PREREQUISITE: Permission of the Department Chairman

1,2,3,or4 credits

3042 — Independent Study — Physics 2

A continuation of 3041. PREREQUISITE: 3041 and permission of the Department Chairman

1,2,3,or4 credits

3043, 3044, 3045, 3046, 3047, 3048

Programmed Introductory Physical Science

3043 — Measures for Matter and Density

3044 — Characteristic Properties of Matter

3045 — Solubility

3046 — Separation of Mixtures

3047 — Compounds and Elements

3048 — Radioactivity and Atomic Modules

1 credit for each module

3064 to 3076 — Programmed Physics

These modules correspond to Physics 21, 22, and 23.

1 credit for each module

PROGRAMMED PHYSICS 21

3064 — Module 1 — Kinematics and Dynamics

- a. Vectors and mathematical preliminaries
- b. Kinematics: Motion in one dimension
- c. Kinematics: Motion in two dimensions
- d. Dynamics: Newton's Three Laws of Motion

3065 — Module 2 — Conservation Laws and Applications

- a. Work and energy
- b. Conservation of energy
- c. Conservation of linear momentum
- d. Collisions: Applications of b and c

3066 — Module 3 — Rotational Kinematics and Dynamics

- a. Rotational Kinematics: Analogues with linear motion
- b. Rotational dynamics: Analogues with linear motion
- c. Conservation of angular momentum
- d. Equilibrium of Rigid Bodies

3067 — Module 4 — Oscillations, Simple Harmonic Motion

- a. Oscillations
- b. Energy considerations in SHM
- c. Relation between SHM and Uniform Circular Motion

3068 — Module 5 — Unifying Module, Combined Problems

- a. Review dynamics: Application; Gravitational field
- b. Combined Problems: Applications of SHM and Gravitation
 1. SHM liquid in a tube
 2. Simple pendulum
 3. Particle executing SHM through a tunnel in the earth
 4. Block colliding with block on a spring
 5. Ball in a well
 6. Torsion pendulum

These problems are presented *stressing* principles developed in previous modules.

3069 — Module 1

1. Charge and matter
2. The electric field
3. Gauss' Law
4. Electric Potential

3070 — Module 2

1. Capacitors and Dielectrics
2. Current and resistance
3. Electromotive Force and Circuits

3071 — Module 3

1. The magnetic field
2. Ampere's Law
3. Faraday's Law
4. Inductance

3072 — Module 4

1. Magnetic Properties of matter
2. Electromagnetic Oscillations
3. Electromagnetic Waves

PROGRAMMED PHYSICS 23

3073 — Module 1

1. Temperature
2. Heat and First Law of Thermodynamics
3. Kinetic Theory of Gases
4. Entropy and the Second Law of Thermodynamics

3074 — Module 2

1. Fluid Mechanics
2. Waves in elastic media
3. Sound Waves

3075 — Module 3

1. Geometrical Optics
2. Interference
3. Diffracting, Gratings, and Spectra

3076 — Module 4

1. Planck's radiation formula
2. Photoelectric effect
3. Einstein photon theory
4. Compton effect
5. Line Spectra - Atomic Models
6. Correspondence Principle

3083 — Radiologic Physics 1

The physical principles of radiology. Physical units, work, force and energy, electricity and magnetism, motors and generators, elementary circuits analysis, measuring devices, transformers, X-ray circuits, and X-ray generation, nature and spectra are treated in the lecture and demonstrated in the laboratory.

4 credits

3084 — Radiologic Physics 2

A continuation of Radiologic Physics 1. The course includes image quality, screens and grids, interactions of radiation and matter, protection and health physics, electronics associated with radiology, such as image intensification systems and video tape systems. The course finishes with a discussion of physics, mathematics and instrumentation of nuclear medicine and internal dosimetry of radionuclides. PREREQUISITE: 3083

4 credits

3096 — Introductory Astronomy 1

A two-semester transferable course in introductory astronomy. The first semester will begin with an historical review and then proceed to cover material on the earth and the rest of the solar system.

4 credits

3097 — Introductory Astronomy 2

A continuation of Introductory Astronomy 1. The second semester will concentrate on stars, star formation, star systems, galaxies. It will conclude with an introduction to cosmology. PREREQUISITE: 3096

4 credits

3311, 3312, 3313, 3314 — Programmed Physics

To accommodate programmed instruction in Physics 1, in which students proceed at their own rate.

3311 — Module 1

An introduction to mathematics for science. Includes units conversion, significant figures, scientific notation and elementary vector problems.

3312 — Module 2

Elementary mechanics starting with one dimensional kinematics and ending with Newton's laws.

3313 - Module 3

Three interesting topics in Physics; universal gravitation, circular motion and momentum.

3314 — Module 4

A discussion of various forms of energy and their relationships. Some thermodynamics is included.

4 credits
1 credit per module

3315, 3316, 3317, 3318 — Programmed Physics

To accommodate programmed instruction in Physics 2, in which students proceed at their own rate.

3315 — Module 5

Electricity — Investigating the electrical structure of matter, Coulomb's Law, electrostatic and potential fields, Ohm's Law and electric currents.

3316 — Module 6

Magnetism — Investigating magnetic induction, magnetic properties of matter, Faraday's Law of induction, and propagation of an electromagnetic field.

3317 — Module 7

Light — Study of reflection, refraction, and the physical optics.

3318 — Module 8

Modern Physics. Lectures and study of recent discoveries in atomic and nuclear physics.

4 credits
1 credit per module



SOCIAL SCIENCES

— 4000 SERIES —

ECONOMICS

4014 — Principles of Economics 1

The course (Macroeconomics) is primarily offered for those students who will never take more than one or two semesters of economics but are interested in the subject as a part of a general education. It aims at the understanding of current economic institutions and problems of American civilization. National economic behavior rather than individual unit behavior provides the central unifying theme of the course. No previous knowledge of economics is assumed. The student will become subject to a qualitative approach which deals ostensibly with the fundamental concepts underlying the United States economic system in which few basic economic areas are investigated in a systematic manner in order to enable the student to develop an awareness and an understanding of present economic problems.

3 credits

4015 — Principles of Economics 2

This course is the sequential course to Economics 1 (4014) and primarily concerned with Microeconomics with secondary concern to the United States and World Economics. Microeconomics deals with the subsystems of the economy such as the economics of the individual, the firm and the industry. The major emphasis is on a thorough analysis of supply and demand and of the functions of the price system. The United States and the World Economics portion of the course deals not only with our economy and its relations with other economics but also with the domestic aspects of some other economics as well. PREREQUISITE: 4014 — Principles of Economics 1

3 credits

4016 — Current Economic Problems

A course designed to acquaint the student with several of the more important problems of our economy such as economic growth, unemployment, consumer credit, cost of air pollution and population explosion. The main aspect of the course will be practical economic analyses of the problems. PREREQUISITE: 4014 — Principles of Economics 1

3 credits

HISTORY AND GOVERNMENT

4012 — History of Western Civilization 1

Origin and development of Western Civilization beginning with the classical civilizations of the ancient world and dealing with the contributions of each major historical group until the emergence of modern Europe in the Commercial Revolution of the Sixteenth Century. The emphases are upon the social, economic, and cultural trends of each period.

3 credits

4013 — History of Western Civilization 2

The evolution of modern Western Civilization since the Commercial Revolution of the Sixteenth Century. This semester covers the period of colonization, the Industrial Revolution, and the emergence of modern national states extending to the present. The emphases are upon the social, economic, and cultural developments.

3 credits

4078 — Introduction to Modern Britain

A survey of Britain in the 18th, 19th and 20th centuries. Social, economic, political and intellectual developments are treated with emphasis upon Britain's influence in world history and especially in American history.

3 credits

4079 — History of Russia 1

A study of Russian political, social, literary and intellectual history from the Rurik Dynasty to the Decembrist Revolt.

3 credits

4080 — History of Russia 2 (Since 1905)

An introduction to the political, economic, social and intellectual development of Russia, with emphasis on the origins of Russian Marxism, and the origins, course and impact of the Bolshevik revolution, together with the internal development in the Soviet period and international relations.

3 credits

4081 — History of the United States 1

History of the United States beginning with our European background and dealing with the development of the American nation until the end of the Civil War in 1865. The social, economic, and institutional aspects are emphasized.

3 credits

4082 — History of the United States 2

History of the United States from the Reconstruction Period until the present. The course covers the political, social, economic, and institutional developments of the American people into a great world power.

3 credits

4097 — Introduction to Africa, Asia, & Latin America

A survey of the principal similarities and differences among Asian, African and Latin American countries with emphasis on their social, cultural and historical characteristics.

3 credits

PHILOSOPHY

4089 – Introduction to Philosophy

An introductory course in philosophy designed to acquaint the student with the various fields of philosophic endeavor. Some of the areas covered are: logic, free-will and determinism, theories of truth, epistemology, metaphysics, ethics, aesthetics, philosophy of religion and science, as well as political philosophy. Designed to lead the student to constructively examine his beliefs about a wide range of topics relevant to the world we live in today.

3 credits

4090 – Introduction to Comparative Religions

This course attempts to acquaint the student with the rituals, beliefs, practices, and organization of the major religious systems of mankind. One of the basic assumptions guiding the presentation of the course materials is that man is a religious being who worships in an infinite variety of ways which help shape his concept of himself, his world, and his role in the world in Buddhism, Confucianism, Taoism, Islam, Judaism, and Christianity with its major divisions and sects.

The presentation will be divided between class lectures by the instructor, special invited guest lecturers, film presentations, panel discussions by resource persons in our community, student presentations, and selected field trips.

3 credits

4104 – Contemporary Moral & Philosophical Issues

This course is structured to deal with many of the major philosophical and moral issues of our times. Major areas of concern are: Our nation and the moral implications of our security policy; the value systems of a business society; sex and society; the morality of discrimination based on sex, race or religion; the religious institutions and society; the new technology and human values and the problems of alienation of our modern age. The method of presentation will be varied including films and discussions, resource lectures from local groups, papers, and reports by the students, field trips and lectures by the instructor.

3 credits

POLITICAL SCIENCE

4083 — Political Science 1 (Government and Politics of the United States)

An introductory course to provide students with a general understanding of the basic phenomena of political systems and governmental policy formation, organization, and general administration.

3 credits

4084 — Political Science 2 (European Comparative Government)

An introductory comparative survey of the institutions, politics, methods and problems of the Governments of Great Britain, France, West Germany and the U.S.S.R.

3 credits

PSYCHOLOGY

4071, 4072, 4073 — Human Relations at Work

A very basic, introductory course designed to emphasize some of the psychological principles that directly affect persons in the world of work, and the means by which they may be applied to practice in specific technological areas.

1, 2 or 3 credits

4085 — Child and Developmental Psychology

An introductory course which presents some of the cardinal biological, psychological, and sociological factors underlying human behavior at different major stages of development to adolescence.

PREREQUISITE: 4073 — Human Relations; or 4086 — General Psychology

3 credits

4086 — General Psychology

An introductory course designed to provide students with a general knowledge of the concepts and methods of psychology. Topics considered include the development of behavior, sensation, learning, motivation, intelligence, attitudes, personality and emotion.

3 credits

4087 — Principles of Normal and Abnormal Behavior

A general introduction into the origin, development, degrees of mental disorganization, and the methods of coping with psychological dysfunction. Inquiry will also be made into the theoretical and applied approaches of several of the major schools of thought with regard to helping services. PREREQUISITE: 4086 — General Psychology

3 credits

4088 — Adolescent Psychology

A study of the growth and problems of adjustment for adolescents, including the struggle to retain their identity and attain maturity. PREREQUISITE: 4073 — Human Relations; or 4086 — General Psychology

3 credits

4092 — Psychology of Human Adjustment and Personal Effectiveness

An introductory course which explores the means by which a person manages himself and learns to cope with some of the multiple drives, demands and pressures encountered in human living. The contributions of major theorists such as Erikson, Freud, Fromm, Rogers and Sullivan will be considered. Lectures, textbooks, collateral reading, verbal and written reports will be required.

PREREQUISITE: 4073 — Human Relations; or 4086 — General Psychology

3 credits

4093 — Introduction to Industrial and Organizational Psychology

The application of basic psychological principles to human problems in industry. Major areas of emphasis will include worker motivation, individual differences, personnel problems, selection and training, job satisfaction, employee attitudes and incentives, industrial mental health, human relations factors and psychological tests used in industry. PREREQUISITE: 4073 — Human Relations; or 4086 — General Psychology

3 credits

4103 — Psychology of the Exceptional Child

An introductory course emphasizing the etiology, diagnosis, characteristics, education, and prognosis of children with deviations in mental, physical, and/or social-emotional development. PREREQUISITE: 4086 — General Psychology

3 credits

SOCIOLOGY

4008 — Introduction to Sociology 1

An introductory course designed to acquaint the student with a working knowledge of the concepts used by sociologists and with the well-established generalizations in the field. Topics include such factors as socialization, primary groups, stratification, population, mobility, and its effects.

3 credits

4009 — Introduction to Sociology 2

A continuation of the application of sociological concepts and principles to selected aspects of contemporary society, especially the basic social institutions and cultural patterns.

PREREQUISITE: 4008 — Introduction to Sociology 1

3 credits

4091 — The Black Experience in Contemporary American Society 1

This course will focus upon the role of the Afro-American experience in history. Among the topics discussed will be the following: View of the African way of life, attitudes toward the Afro-American slave trade, Colonial enslavement and its many facets, the Black man in the American Revolution, antebellum slave system and the Black man in American society. Additional focus will be upon the Black contributions in science, history, religion, and sports. Focus will also be upon the Civil War and Black reconstruction as well as analyses, problems, and contributions of Afro-Americans in contemporary society.

3 credits

4094 — The Black Experience in Contemporary American Society 2

The course will relate the nature of the Afro-American experience including the periods of reconstruction, disfranchisement and white supremacy. Philanthropy and education will be discussed along with black economic, social, and cultural growth, urban problems and violence. A further examination will focus upon the Harlem Renaissance, political regeneration, and the black revolution. PREREQUISITE: 4091 — The Black Experience in Contemporary American Society

3 credits

4095 — Current Issues Influencing Black Americans

The course will seek to examine, interpret and project current issues affecting Black Americans. Some of the areas to be considered are the following: police-community relations, unemployment, inadequate housing and education, the administration of justice, consumer credit practices, Black Capitalism and Black power, population in Urban Centers and attitudes projected by the mass media about minority groups. Consideration will also be given to attitudes about war, pollution and the welfare system in addition to issues which arise during the presentation of this course.

3 credits

4099 – Urban Sociology

An introduction to the study of urban social problems, with emphasis upon minority-majority group conflicts, political patterns and problems, inner-city educational dynamics, power groupings, and central-city change. PREREQUISITE: 4008 – Introduction to Sociology 1

3 credits

4101 – Occupational Information

The course is designed to acquaint students with information concerning job placement, career possibilities, resumes, interviews, college transfer information, self-measurement, follow-up and evaluation techniques, and use of texts such as the D.O.T. and Hoppock's "Occupational Information."

1 credit

4106 – Contemporary Social Issues

An exploration of the basic problems and new ethics in our rapidly changing society. Sociological perspective on the following areas will be emphasized: poverty, crime, minority group relations, urban renewal, over-population, juvenile delinquency, alcoholism, and drug addiction.

3 credits

BUSINESS

— 5000 SERIES —



5005 — Medical Records

This course gives instruction and practice in the fundamental principles of professional accounting covering daily record keeping; the theory of debits and credits; classification of accounts; journalizing; preparation of financial statements; use of the trial balance; and technical procedures involved in closing the operating accounts of a single proprietorship in a professional business. A definite effort is made to correlate the work to that of a medical situation. The course meets three hours per week.

3 credits

5006 — Dental Records

This is a general course for the dental assistant, based on the understanding and importance of keeping accurate dental and financial records. Basic mathematical skills are reviewed and developed for practical application in a dental office. Included are procedures in filing, banking, billing, payroll, insurance and tax forms, and all types of financial transactions which might be found in a dental office. The student is familiarized with the postal, shipping, telephone and telegraphic services related to the dental office. This course meets three hours per week.

3 credits

5007 — Dental Typewriting

This is a one-semester course designed primarily for the dental assistant. The course covers correct typewriting techniques and the development of skill and accuracy. The student becomes familiar with the block and semi-block styles of letters, typing of envelopes, and the use of carbon paper. An effort is made to correlate the typing projects to dental situations. The course meets five hours per week.

3 credits

5008 — Typewriting 1

A foundation course in which correct typewriting techniques, skill and accuracy are stressed. Timed writings, from 3 to 5 minutes are introduced. The student becomes familiar with centering and simple letter styles. Class drills and projects aid in individual progress. The minimum speed requirement for this course is 40 words per minute for five minutes with three or less errors. The course meets five hours per week.

3 credits

5009 — Typewriting 2

This course is a continuation of 5008 or its equivalency with continued development of speed and accuracy together with a thorough mastery of all letter styles, interoffice correspondence, addressing envelopes, rough draft materials, and tabulation. The minimum requirement for this course is 60 words per minute for five minutes with 2 or less errors. The course meets five hours per week. PREREQUISITE: 5008 or equivalent

3 credits

5010 — Legal Typewriting

This course is designed specifically for the legal secretary where stress is placed on building speed and accuracy in the understanding and production of legal documents and correspondence. Typing stamina is built and maintained through the use of one-, five-, and ten-minute timed writings. Legal vocabulary and punctuation are emphasized through project work. The course meets five hours per week. PREREQUISITE: 5009

3 credits

5011 — Executive Typewriting

This course is designed for the executive secretary where difficult materials in manuscript, legal, statistical, and rough draft typing present a challenge in problem solving for the student. Speed and accuracy are developed through the production of these materials. Typing stamina is further built and maintained through the use of one-, five-, and ten-minute timed writings. The course meets five hours per week. PREREQUISITE: 5009

3 credits

5012 – Medical Typewriting

This course is designed specifically for both the medical assistant and the medical secretary. Emphasis is placed on the understanding and production of medical forms, case histories, discharge summaries, medical reports, and medical correspondence. The course meets five hours per week. PREREQUISITE: 5008 or equivalent

3 credits

5014 – Medical Office Practice 1

This course is designed to familiarize the student with the routine business skills pertinent to the medical office. The course includes practice in reception room procedures, telephone techniques, filing, postal and shipping services, abstracting medical articles, compiling medical information, and the handling of confidential materials. Machine transcription will be introduced during this semester. The course meets three hours per week.

3 credits

5015 – Medical Office Practice 2

This is a continuation of Medical Office Practice 1 with the use of the Medical Office Practicum to give the student an opportunity to put into practice the routine office procedures she will meet in the medical office. She will have an opportunity to practice on a variety of office machines, including duplicating equipment, copying machines, calculators, and IBM Executive typewriters. Continued emphasis will be placed on machine transcription to develop the student's ability to handle case histories, discharge summaries, autopsies, pathological reports, and medical correspondence. The course meets three hours per week. PREREQUISITE: 5014

3 credits

5016 – Secretarial Practice 1

This course gives the student instruction and practice in a variety of secretarial skills including the duties of the receptionist, postal and shipping services, telephone techniques, filing procedures, handling confidential matters, conferences, itineraries, and interviews. Through the use of work-basket projects, the student develops initiative and decision-making abilities essential to top level secretarial positions. The course meets three hours per week.

3 credits

5017 — Secretarial Practice 2

This is a continuation of Secretarial Practice 1 with emphasis on the operation of a variety of office machines — duplicating equipment, copying machines, calculators, adding machines, electronic calculators, IBM executive typewriters, and transcribing equipment. Continued emphasis will be placed on the training of secretaries for top-level positions through the media of field trips, flower arrangement demonstrations, good grooming lectures, and practice as the hostess in serving light refreshments in the office. The course meets three hours per week. PREREQUISITE: 5016

3 credits

5018 — Shorthand 1

In this course emphasis is placed on the mastery of the principles of College Gregg Shorthand, Diamond Jubilee Series, with particular attention to penmanship, vocabulary, spelling, and punctuation. The mastery of the principles and the building of vocabulary are developed through the use of reading and writing shorthand. Gregg Shorthand Tapes, correlated with the textbook, are used in the development of speed in taking dictation. The minimum requirement for the course is 60 words per minute for two minutes on familiar material with at least 95 percent accuracy. The course meets five hours per week.

4 credits

5019 — Shorthand 2

This course continues with the refinement of the principles of College Gregg Shorthand with further emphasis on penmanship, vocabulary, spelling, and punctuation. Emphasis is placed on the development of speed and accuracy in taking dictation. Gregg Shorthand Tapes, correlated with the text, are used in the development of speed. The minimum requirement for the course is 80 words per minute for three minutes on new materials with at least 95 percent accuracy. The course meets five hours per week. PREREQUISITE: 5018 or 5062

4 credits

5020 — Shorthand 3

This course stresses the development of speed with continued emphasis on vocabulary, spelling, and theory work. As the student works through the different departments of a large organization, she

not only becomes familiar with the specialized vocabulary but also becomes aware of the challenges presented by each department. Individual progress is recorded each week as the student transcribes five-minute takes. The minimum requirement for the course is 80 words per minute for five minutes with at least 95 percent accuracy. The course meets five hours per week. PREREQUISITE: 5019

4 credits

5013 — Medical Shorthand

This is a comprehensive medical shorthand skill building course. Emphasis is placed on the mastery of the shorthand outlines for the commonly used medical terms with particular attention to the medical prefixes and suffixes. The student not only masters the shorthand outlines but must also become thoroughly familiar with the spelling and meaning of medical nomenclature. The course meets five hours per week. PREREQUISITE: 5019

4 credits

5021 — Executive/Technical Dictation & Transcription

This course is designed to develop the student's ability to take dictation at high rates of speed and to transcribe rapidly and accurately. No credit is given unless the transcript is mailable. Shorthand theory, punctuation, spelling, and vocabulary are stressed throughout the course. The course meets eight hours per week. PREREQUISITE: 5020

6 credits

5034 — Medical Dictation and Transcription

This course is a continuation of Medical Shorthand with further development of shorthand characters for medical terms, as well as a mastery of the spelling, meaning and pronunciation. The student develops the ability to take dictation of case histories, operative reports, autopsies, and pathological reports and to transcribe with speed and accuracy. The course meets eight hours per week. PREREQUISITE: 5013

6 credits

5036 – Legal Dictation and Transcription

This course is designed to develop the student's ability to take dictation of legal material at high rates of speed and to transcribe with speed and accuracy. Legal terminology, spelling and punctuation are stressed throughout the course. No credit is allowed unless the transcript is usable. The course meets eight hours per week. PREREQUISITE: 5020

6 credits

5062 – Skill Building

This course is designed for the student who has had some experience with shorthand but does not feel secure enough to proceed with Shorthand 2. The course will include a thorough review of College Gregg Shorthand principles. Emphasis will be placed upon the development of speed and accuracy in taking dictation of more difficult materials in conjunction with spelling, punctuation and vocabulary. The minimum requirement for the course will be 80 words per minute for three minutes with at least 95 percent accuracy. The course will meet five hours per week.

4 credits

5022 – College Accounting 1

This course gives instruction and practice in the fundamental principles of professional accounting covering daily record keeping; the theory of debits and credits; classification of accounts; journalizing; preparation of financial statements; use of the trial balance; and technical procedures involved in closing the operating accounts of a single proprietorship in a service and professional type of business. The course meets three hours per week.

3 credits

5038 – College Accounting 2

The basic principles of accounting are expanded with the introduction of records maintained on the accrual basis. Merchandise inventory, the purchases journal, the sales journal, accounts receivable and accounts payable, notes and interest, and deferred and payable items are mastered and integrated with the complete accounting cycle. The course meets three hours per week. PREREQUISITE: 5022 or equivalent

3 credits

5023 — Accounting 1

An introductory course covering the basic structure, concepts, and principles of accounting. Emphasis is placed upon the recording, classifying, and summarizing of the financial information which flows within a business enterprise. The accounting cycle including statement presentation is examined along with such areas as sales, purchases, cash, receivables, payables, inventory and plant assets.

4 credits

5024 — Accounting 2

The course expands upon the fundamentals learned in Accounting 1 and examines the role of accounting in partnerships and corporations. Accounting for long term debts, investments and branches is also introduced. Attention is also given to the development and use of the special cost, budget, and analysis reports used by management. PREREQUISITE: 5023

4 credits

5040 — Intermediate Accounting 1

A course designed to develop the power of analysis in utilizing accounting data. The emphasis is on theory and the application of theory in problem solving. Included is a review of the accounting cycle, followed by consideration of the balance sheet accounts, cash and temporary investments, receivables, inventories, current liabilities, investments, and plant and equipment. PREREQUISITE: 5024

3 credits

5041 — Intermediate Accounting 2

Includes an in-depth study of the theory and analysis of the balance sheet accounts and the use and interpretation of financial data. Areas considered are intangibles, long-term liabilities, stockholders' equity, statements from incomplete records, errors and their correction, use of analysis of financial statements, funds flow, and price level changes. PREREQUISITE: 5040

3 credits

5026 — Cost Accounting

This course provides an overview of the nature and purpose of cost accounting. Cost data, including related budgets, standards, and reports are discussed as priceless tools of modern management. Considering first the basic concept that the flow of cost matches the flow of work, the student is carried by a continuity of presentation through job-order cost accounting, followed by process costing, budgeting, standard costing, nonmanufacturing costing, direct costing, and the application of data processing techniques to cost procedures. PREREQUISITE: 5024

3 credits

5044 — Corporation Finance

The course offers a complete survey of the financial requirements, practices, and policies of the modern business corporation. Areas of study include the promoting, organizing and financing of a corporation, and the various regulations which must be adhered to. Further topics will include corporate expansion and corporate failure. Supplementary course material will include illustrations from financial magazines and papers. PREREQUISITE: 5024

3 credits

5045 — Credits and Collections

Credit is examined historically and as an integral part of the business system today. The functions of credit, elements of determining credit worthiness, and credit instruments are studied. Also included are elements of retail credit and consumer credit as well as the function of the credit analyst and of the credit manager. PREREQUISITE: 5024

3 credits

5046 — Money and Banking

The functions and services of money and credit as media of exchange are discussed. A detailed study is made of the organization and functions of modern financial institutions such as commercial banks, trust companies, investment security houses, savings institutions, stock exchanges, the Federal Reserve System, and other credit and financial institutions.

3 credits

5047 — Financial Statement Analysis

Analysis of financial statements and trends to evaluate performance of management and direction of progress of the business; condition of the company as its balance sheet data and results of its operations in terms of return on capital invested and use of working capital; advantage of presentation of facts through statements of application funds, cash flow projections, and budgetary planning for current and future outlook.
PREREQUISITE: 5024

3 credits

5031 — Our Legal Environment

This course is designed specifically for the medical assistant and medical secretary and introduces the student to the basic legal theories, including Agency, Torts, and Contracts and the application thereof to medical personnel. Emphasis is placed on common law and statutory ethical and professional principles, responsibilities, and liabilities correlated with the status and legal rights of the patient, including minors, in such areas as privacy and consent. The course includes analysis of recent case law and discussion of Medical Practice Acts and Codes of Medical Ethics. The course meets three hours per week.

3 credits

5048 — Business Law 1

A study of the basic legal principles underlying modern business transactions with particular attention to contracts, agency and employment, checks, drafts and promissory notes, personal property, and bailments.

3 credits

5049 — Business Law 2

The study outlined in Business Law 1 is continued with emphasis upon the law of sales, security devices, insurance, partnerships, corporations, real property, trusts, decedents' estates, bankruptcy, governmental regulation of business and labor laws.
PREREQUISITE: 5048

3 credits

5051 — Business Policies

The purpose of this course is to develop an appreciation of the relationship between decision making and the administrative or policy making process. An overall approach to company operation is taken, and the interdependence of activities is emphasized. Integrated cases are used to develop a systematic approach to decision making, to the formulation of policies, and to putting policies into practice. PREREQUISITE: 5050.

3 credits

5053 — Labor Relations

This course is designed to expose the student to the labor movement and to the labor issues. Areas of analysis will include the history of unionism, the collective bargaining process, labor laws and economic security. Emphasis is placed upon the dynamics of the expanding area of labor-management relations. PREREQUISITE: 5050

3 credits

5055 — Logistics

The study of the movement and storage of goods in a manner optimizing time and place utility. Transportation modes, rate structures, inventory control and EOQ models, inventory information systems, and the role of the distributor in orderly movement of goods are considered. PREREQUISITE: 5059

3 credits

5028 — Beauty Salon Management

Recordkeeping, business law for beauty salons, advertising, shop furnishings, supplies control, bookkeeping, income tax records, telephone techniques, and merchandising comprise this course.

2 credits

5029 — Small Business Management

A basic course dealing with the fundamental principles and techniques underlying the managerial process in small business management. Topics include marketing, finance, production, and personnel policies. Case studies and problems are part of the course.

3 credits

5050 — Principles of Management

The basic purpose of this course is to provide an understanding and appreciation of the importance management plays in the successful operation of the business and any organizational institution. The theories of management are analyzed, and their applications are discussed. Case problems and outside assignments are utilized to develop an understanding of the relationship between theory and practice.

3 credits

5052 — Personnel Management

This course is designed to study the nature and function of personnel administration in its relation to the entire scope of the business enterprise. Supervisory skills are related to employee needs, and case problems are used to demonstrate the role of personnel administration, manpower requirements, employee developments, and employee evaluation. PREREQUISITE: 5050

3 credits

5054 — Production Management

The organization and operation of the physical means of production are emphasized. Included are capital equipment utilization, work measurement and methods analysis, cost, quality and production control, job evaluation and wage incentive systems. Consideration is given to the quantitative aspects of modern management and their value to the executive. PREREQUISITE: 5050

3 credits

5056 — Marketing Management

The application of marketing principles to the study and resolution of marketing problems related to distribution, pricing, advertising, product line planning and merchandising, and research. Students are exposed to quantitative aspects in the solution of problems utilizing models and computerized games. PREREQUISITE: 5059

3 credits

5057 — Marketing Research

This course introduces the student to the specialized techniques of marketing research and its contribution to management decision making; evaluates quantitative and qualitative approaches to marketing research and their effective use; includes an introduction to packaged information, survey and sampling techniques, motivation research, forecasting, and market simulation; emphasizes the development of skills in analysis and interpretation as a basis for problem solving. PREREQUISITE: 5059

3 credits

5059 — Marketing Procedures

Introduction to marketing principles, functions, and institutions as related to retail, industrial, and commodities markets. Emphasis is placed on the concept and roles of marketing; the identity of the consumer; functions of distribution; and specific characteristics of retailing, wholesaling, industrial, and commodities marketing.

3 credits

5060 — Business Statistics

Business Statistics is designed to provide a clear, concise discussion of the essential elementary statistical methods used in business and economics today. While the major emphasis is placed on the methods themselves, the theoretical background is explored where necessary for thorough understanding. This course is approached non-mathematically and is designed for the student with a limited math background. The student is encouraged to do field problems and projects during the term.

3 credits

PUBLIC ADMINISTRATION

5075 — Principles of Organization

Basic concepts of supervision and management, duties and responsibilities of supervisors. Planning, organizing and directing the work. Development of supervisory skills; counseling, coaching, discipline, employee complaints. Evaluation of performance,

evaluation interviews. Principles of learning and motivation, demonstration and practice. Instructional methods, employee training. Improving work methods and work simplification, job standards. Working with unions.

3 credits

5076 — Introduction to Public Administration

Organization and management in modern government with emphasis on the important ideas and theories of public administration — past and present. The course will also stress the important concepts of responsibility and accountability in a democratic bureaucracy.

3 credits

5077 — Administrative and Municipal Law

This course will be divided into two separate, yet complementary sections: The first half of the course will deal with administration laws and include concepts such as rule of law V, discretion, the role of the ombudsman, etc. The second half of the course will cover the importance of municipal law and deal with topics such as civil service laws, debt limits, ordinances and bylaws, incorporations, etc.

3 credits

5078 — Public Personnel Administration

The personnel function in bureaucracy; patronage and merit; career service and political executives; authority and informal organization.

3 credits

5079 — State Government

State politics, organization and functions with emphasis on the role of the state in our federal system.

3 credits

5080 — Municipal Government

A survey of the governmental structure and function of American municipalities.

3 credits

5081 — Public Relations

Public relations is conceived as an interacting process involving both program performance and communication. The more sophisticated aspects of public relations are covered, including

analysis and research, composition of the public, community group relationships and historical and political perspectives. Covers citizen services, employee citizen relations, police and public relations, mass media, government reports and events, publication planning and printing, organization for public relations and employee relations and training.

3 credits

5082 — Municipal & State Finance & Budget Administration

A study of the systems of finance and the achievement of program objectives in public administration. Emphasis is placed upon aspects of the budgetary process that bear on fiscal policy and appropriations and includes state statutory requirements, the role of the legislature, the role of the financial officer, the role of the administrator, assessing and municipal finance, public purchasing and contracts, personnel aspects, school finances, impact of aid programs, and long range fiscal planning.

3 credits

5083 — Labor Management Relations

The history of the American labor movement, union security, seniority negotiation and arbitration, collective bargaining agreements, right to work laws, strikes, management prerogatives and labor management cooperation plans, congressional and other judicial laws concerning labor and judicial decisions interpreting these.

3 credits

5084 — Municipal and Regional Planning

The history and contemporary practices in municipal planning and the development of the methodology and techniques for analysis of today's planning. Review and discussion of the problem of identifying, selecting, and reconciling appropriate goals of regional area development. Course includes the legal basis for zoning and for planning in Massachusetts and focuses on the relationship of land use to social and economic patterns.

3 credits

5085 — Quantitative Analysis for Public Administrators

Introduction to basic research and statistical techniques as applied to special problems in the field of public administration.

3 credits



TECHNICAL

— 6000 SERIES —

AUTOMOTIVE TECHNOLOGY

6099 — Gasoline Engine Systems

Nomenclature, design, theory of operation and service. A study of the cooling, lubrication and positive crank case ventilation systems, antifreeze service, filters, seals, gaskets, valves, basic ignition circuits, and measurement devices. Meets four times a week.

3 credits

6100 — Gasoline Engine Service

Disassembly and assembly of modern gasoline engines. Includes valves and valve operating mechanisms, pistons, and connecting rod assemblies, crankshaft and bearings. Laboratory assignments provide experience in disassembly and reassembly of live lab engines. Students make wear measurements and adjustments according to factory recommended specifications. Meets four times a week.

3 credits

6101 — Drive Line

The function, construction, operation, servicing, and trouble shooting of conventional clutch assemblies, standard transmissions, propellor shafts and joints, and differentials. Presented through lecture, demonstrations, and student participation in disassembly and reassembly of functional components. Meets four times a week.

3 credits

6102 — Automatic Transmissions

Principles of operation, construction, servicing and trouble shooting. Covers fluid couplings, planetary gears, hydraulic controls, seals and adjustments. Students participate in disassembly and reassembly of selected transmissions along with actual testing and service work in the school laboratory. Meets four times a week.

3 credits

6103 — Brakes

A study of basic hydraulics, operation and construction of dual master cylinders, wheel cylinders, disc brakes and power units. Instruction in system bleeding, machining of drums, disc and brake shoes are performed using modern service equipment. Student assignments provide actual work and diagnostic problems on cars in the laboratory. Meets four times a week.

3 credits

6104 — Steering and Front Suspension

A study of steering geometry, linkage, springs, suspension systems, conventional and power steering adjustments and service. Tire wear problems, tire truing, wheel balance and wheel alignment services are done by the student using the very latest equipment. Meets four times a week

3 credits

6105 — Fuel and Electric Systems

Fundamentals of electricity and magnetism, construction and use of meters, testing and servicing of batteries, A.C. and D.C. generators and control units, starting systems, instruments and horn circuits. Includes a study of basic carburetion principles, fuel-air ratio requirements, venturi principles and basic carburetor circuits. Students participate in disassembly and reassembly of components and perform required bench tests. Meets four times a week.

3 credits

6106 — Engine Diagnosis and Tune-up

Covers theory of operation and testing of all components in the ignition system. A study of engine tune-up, exhaust emission devices and diagnosis using modern test procedures. Students participate in bench work and actual service problems using the latest electronic devices and the school's chassis dynamometer lab. Meets four times a week.

3 credits

BIO—MEDICAL TECHNOLOGY

6002 — Bio-Med Electronic Systems 391

A continuation of the first year electronics courses with emphasis on circuits commonly found in bio-medical equipment; specialized power supplies, D.C. amplifiers, differential amplifiers, chopper amps, and operational amplifiers.

4 credits

6004 — Bio-Med Techniques 391

Introduction to cell structure and physiology. Course designed to give a concise survey of human anatomy and physiology emphasizing structure and function of each system.

Structural anomalies and functional disorders are studied in their relation to bio-medical instrumentation.

4 credits

6005 — Bio-Med Techniques 392

Introduction to basic chemistry emphasizing redox, chemical equilibrium, and ionization. Includes some physiological chemistry and the integrating of concepts with related laboratory apparatus.

4 credits

6006 — Bio-Med Techniques 393

Application of knowledge gained in Bio-Med Techniques 6004 and 6005 to specific classes of instruments; e.g., centrifuges, spectro-photometers, recording and data handling apparatus. Principles of operation, application, and service problems are discussed.

4 credits

6007 — Bio-Med Techniques 394

A continuation of Bio-Med Techniques 393 with emphasis on various types of physiological monitoring equipment.

3 credits

6117 — Electronic Devices 391

Resistors, batteries, conductors, insulators, voltmeters, ohmmeters, ammeters, inductors, and capacitors. Introduction to test equipment, such as signal generators and oscilloscopes. Taught concurrently with 6120.

3 credits

6118 – Bio-Medical Measurement 391

Bio-medical transducers used for temperatures, pressure, and flow measurements are discussed, along with related concepts in physics.

Effort is concentrated on such topics as sensitivity, resolution, recordability, readability, linearity and accuracy, with reference to the above transducers. A prerequisite knowledge of the algebra of linear equations, exponential functions, as well as elementary trigonometry, is required.

3 credits

6119 – Electronic Circuits 391

A.C. theory, inductive circuits, capacitive circuits, transformers, resonance, filter circuits, and diode circuits. Taught concurrently with 6120.

3 credits

6120 – Electronic Amplifiers 391

Semiconductor theory, basic transistor theory, basic vacuum tube theory, applications of transistors, and tubes as amplifiers. Taught concurrently with 6119.

4 credits

6121 – Bio-Medical Measurements 392

This course is an extension of measurements (6118,391) where the interest is shifted to acoustical, optical and radiological devices.

3 credits

6122 – Trouble Shooting 391

Development of the logical procedures and skills necessary to trouble-shoot electronic and electromechanical systems effectively.

3 credits

6123 – Bio-Med Electronic System 392

An extension of Bio-Med Electronic Systems 391 which will cover such topics as telemetry, including AM and FM modulation, transmission, and detection circuits. Also included is an introduction to logic and other simple control circuits. PREREQUISITE: 6002

3 credits

6124 — Bio-Med Equipment Design/Equipment Selection 391

Special projects involving the construction, evaluation, and selection of various components, materials, and instruments to fit into a bio-medical system which the student himself will design.

4 credits

6125 — Basic Electricity 391

Electron theory, Ohm's Law, series circuits, parallel circuits, series-parallel circuits, network theorems, magnetism, electromagnetic theory, and introduction to A.C. Taught concurrently with 6117.

4 credits

CIVIL ENGINEERING TECHNOLOGY

6058 — Strength of Materials

A study of forces and force systems and their applications to materials. Stress and strain produced by the application of forces on beams, columns, trusses, and riveted and welded sections are studied for simple tension, compression, and shear. Laboratory experiments provide experience in measuring and calculating stresses produced for conditions of tension, compression, shear, bending, and torsion.

3 credits

6092 — Surveying 1

The theory and practice of construction surveying. Field practice is given in the use of tape, transit, and level, and in data recording. Techniques of preparing working plans and maps from recorded data are developed making use of field notebooks. Two lecture hours and 6 lab hours.

4 credits

6093 — Surveying 721

A course teaching the basic surveying operations used in landscape work. The use of simple instruments such as tapes and hand levels is covered first followed by study of transits and construction levels. Mapping and contour studies are carried out, and the use of surveying in typical landscape operations is stressed.

3 credits

6096 — Soils and Foundations

Analysis of subsoil conditions; bearing capacity and settlement analysis; character of natural soil deposits; earth pressure and retaining wall theory; stability of slopes and subgrades; foundation types and construction methods; and structural design of foundation elements. Three lecture hours.

3 credits

6097 — Roadway Design and Construction

Problems in roadway design and construction; roadway foundation; pavement surface properties; composition design of flexible pavement; structural design of concrete pavement; pavement subgrade and construction. Three lecture hours and 3 laboratory hours.

4 credits

6160 — Architectural Design and Specifications 1

An introduction to architectural and construction-graphic techniques and written specifications. Emphasis is on residential and light commercial and industrial structures. Two class hours and three laboratory hours per week.

3 credits

6161 — Architectural Design and Specifications 2

A continuation of 6160 with additional emphasis on mechanical and electrical drawings and specifications. Two class hours and three laboratory hours per week. PREREQUISITE: 6160

3 credits

6163 — Construction Estimating

An introduction to estimating and construction office practice to familiarize the student with the construction process as a whole; the ways in which contractors organize their offices to accomplish jobs in construction; the generation of plans and specifications and their use, systems of accounting; and how material quantity "take-off" forms the basis for accounting. Two lecture hours and three laboratory hours.

3 credits

6164 – General Construction Laboratory

Classroom theory of soil mechanics and strength of materials is expanded through material testing experiments using laboratory equipment. In addition, field trips to major construction sites enable students to see current construction practices and techniques. Three laboratory hours.

1 credit

6165 – Construction Methods and Equipment

An introductory study of methods to determine quantities of materials, equipment, labor, and money required for construction projects. It includes characteristics and capabilities of work equipment; methods of obtaining unit costs of in-place construction; and field reporting practices and responsibilities of field inspection. Three lecture hours.

3 credits

6173 – Construction Materials

An introduction to the materials used in the construction industry. Emphasis is placed on their physical properties, methods of production, and their construction applications. Materials covered include wood, steel, aluminum, alloys, glass, concrete, plastics, rubber, and others. Three hours lecture.

3 credits

6177 – Construction Management

A study of specialized business and management topics which are of particular interest to the construction industry. Topics include basic operational patterns, subcontracting procedures, purchasing and expediting, scheduling, change orders, accounting for material and supplies, field labor methods, critical path method, and legal matters. Three lecture hours.

3 credits

DATA PROCESSING TECHNOLOGY

6008 — Introduction to Data Processing

This course includes an overview of Unit-Record equipment and computers and a survey of card layout and form design as applied to both Unit-Record equipment and high-speed computers. Programming languages including Fortran, COBOL, Assembler Language, and Report Program Generator will be compared but will not be discussed in any detail. A study will be made of various input-output devices used in conjunction with modern computers. Tape and Disk file organization will be discussed in detail. The course will introduce the student to the applications of computers in business. Required for Data Processing majors. No prerequisite. Three lecture hours.

3 credits

6009 — Fortran IV

Fortran (an acronym for formula translation) is one of the most widely used compiler languages available for use on many modern day computers. This course is designed to teach the student how to write programs in the Fortran Language so that he may utilize the computer as a tool to solve statistical and mathematical formulae. Students will be given "hands on" experience on the computer so that they can compile and execute the many programs that they will be required to write and test. The course is recommended as an elective to Engineering transfer students and to Data Processing students with a good math background. Elective for Data Processing majors. No prerequisites. Two lab hours and three lecture hours.

4 credits

6011 — BAL — Basic Assembly Language

Basic Assembly Language as applied to the 360 Series of IBM Computers is the main content of this course. Upon completion, the student will be able to write, assemble, and "debug" programs written for this equipment. Extensive use of the IBM 360 Computer in the Data Processing Laboratory will aid the student in bridging the gap between the theoretical and the practical. Required for Data Processing majors. PREREQUISITE: Introduction to Data Processing 6008. Two lab hours and three lecture hours.

4 credits

6012 — Cobol 1

COBOL (Common Business Oriented Language) was developed under the auspices of the Department of Defense with the cooperation of a number of computer manufacturing companies and major users of computers in the United States. COBOL is a compiler-type language designed to handle business problems. Students will use a medium scale computer to test and "debug" the many business programs that will be written as requirements of this course. Required for Data Processing majors. PREREQUISITE: Introduction to Data Processing, 6008. Two lab hours and three lecture hours.

4 credits

6013 — Cobol 2

Advanced COBOL coding techniques for tape and disk files are covered. Core-saving techniques and special features such as SORT verb and REPORT WRITER facility are included. Business-oriented applications will be discussed and programmed in detail. Upon completion of this course, the student will be qualified to design and program a typical business problem in COBOL. Required for Data Processing Majors. PREREQUISITE: Introduction to Data Processing, 6008 and Cobol 1, 6012. Two lab hours and three lecture hours.

4 credits

6015 — TOS DOS Tape and Disk Operating Systems

Upon completion the student will be able to describe a detailed logic flow of the operating systems and plan OS extensions to fit into this systems logic program and test user accounting, supervisor call, nonstandard labels, error and access method routines which use the EXCP level of accessing. He will be able to encode control cards implementing the functions of System Control and Systems Service and encode the Assembler Language Macro instructions necessary to utilize the Data Management and IOCS facilities of DOS and TOS. Required for Data Processing Majors. Offered in the Spring Semester. PREREQUISITE: Introduction to Data Processing, 6008 and BAL — Basic Assembly Language, 6011. Three lecture hours.

3 credits

6017 – RPG/Computer Programming

Report Program Generator (RPG) as applied to the 360 series of IBM Computers is the main content of this course. Upon completion, the student will be able to write, assemble and “debug” programs written for this equipment. Programs for billing, payroll, inventory control, and accounts receivable will be written and tested. Required for Data Processing Majors. Offered each semester. PREREQUISITE: Introduction to Data Processing, 6008. Two lab hours and three lecture hours.

4 credits

6202 – Data Processing Systems and Procedures

The purpose of this course is to teach the student how to develop systems and procedures and apply them to a Data Processing Installation. The student is schooled in the latest techniques of billing, payroll, warehousing, production, and inventory control systems. Required for Data Processing Majors. PREREQUISITE: Introduction to Data Processing, 6008. Three lecture hours.

3 credits

6270 – RPG – Level 2

Report Program Generator level 2 as applied to the 360 series under Disk Operating System and IBM System 3 and other computers that have RPG 2 capabilities. Upon completion, the student will be able to write, assemble and “debug” programs written for this equipment. The additional features of RPG 2 taught in this course enable the programmer to solve any program requirements of all business applications. PREREQUISITE: 6017 – RPG. Three lecture hours and two lab hours.

4 credits

6271 – Telecommunications

The student will be introduced to devices that can be used for the remote transmission of data. Both high-speed and low-speed devices will be covered. At the completion of this course the student will be expected to design a complete telecommunications network for a sample business problem. Several case studies will be discussed during the semester. Three lecture hours. Elective course. Offered as requested.

3 credits

6508 — Introduction to Data Processing — Lab

This lab will provide the student with actual experience in running much of the equipment discussed in course 6008. Required for Data Processing Majors. No prerequisite. Taken concurrently with Introduction to Data Processing, 6008. Two lab hours.

1 credit

ELECTRICAL TECHNOLOGY

6018 — Fundamentals of Electricity — 311

A course dealing with the basic theories and concepts essential to a practical understanding of all phases of electricity and electronics. It treats fully the nature of electricity and magnetism, including an exposition of the electron theory as it relates to electricity. Consideration is given to Ohm's Law, and to associated circuits, batteries, induced E.M.F., magnetic circuits, D.C. measuring instruments, motors, and generators.

4 credits

6023 — Fundamentals of Electronics — 311

The principles and properties of vacuum tubes are given to the operation and use of these devices in rectifiers, amplifiers, oscillators, and other circuits. The accompanying laboratory work enables the student to measure the properties of these devices and to verify their operating principles in actual circuits.

4 credits

6025 — A.C. Fundamentals

Understanding of the basic electrical and electronic principles of D.C. circuits is extended to include the more complex area of A.C. circuits. Generation, vector representation, and algebraic manipulation of the sine wave, inductance, capacitance, resonance, and Ohm's Law for alternating current circuits are studied. Practical methods of measuring inductance, capacitance, and impedance are discussed together with A.C. and D.C. bridge circuits. Included also are the rudiments of complex-wave formation and analysis. In the laboratory, the student will perform experiments confirming theory and will be given experience and training in the repair of A.C. equipment.

4 credits

6026 – Fundamentals of Instrumentation

The student is introduced to the types of measuring means and their function, theory of operation, practical construction, and use. Instrumentation terminology, and measuring devices for pressure, temperature, flow level, and analysis are studied. Experiments are performed in the laboratory. PREREQUISITES: 6018, 6023 and 6025

3 credits

6028 – D.C. Industrial Applications

Electrical and magnetic circuits are studied as they apply to the construction, principles of operation, and performance characteristics of direct current apparatus. Laboratory and lecture are combined in the study of the shunt and compound motors. The course also includes the study of auxiliary apparatus needed to start, stop, and control D.C. motors and generators. PREREQUISITES: 6018, 6023, and 6025

3 credits

6030 – Industrial Electronics Tubes and Circuits

This course deals with the fundamental circuits and components most frequently found in industrial electronic equipment. The basic circuit of a complete electronic control system and the characteristics of the component parts of each circuit are studied. Emphasis is placed on the characteristics of the phanatron, thyatron, ignitron, solid state devices, and sensing elements. Parts of the course deal with vacuum-tube amplifiers, oscillators, and saturable reactors. The laboratory section of the course is designed to verify by means of experiments the characteristics of the components and circuits used in industrial electronics. It is intended to develop an understanding of those circuit construction practices and testing techniques common to the field. PREREQUISITES: 6018, 6023, and 6025

3 credits

6031 – Industrial Electromechanical Systems

Class and laboratory work in basic pneumatic, hydraulic, and mechanical systems which make use of previously acquired understanding of electrical and electronic techniques. The application to automated equipment and systems is stressed. PREREQUISITES: 6028, 6030, and 6023

3 credits

6032 — Electromechanical Circuit Design

The design and application to industrial electromechanical systems of electrical circuitry using solid state devices, integrated circuits, memory storage, and electronics. PREREQUISITES: 6018, 6023, and 6025

2 credits

6033 — Semiconductors and Transistors 1

The principles and electrical properties of semiconductor diodes and transistors are studied. Special emphasis is placed upon the uses of semiconductor devices in rectifiers, amplifiers, oscillators and special circuits.

The accompanying laboratory work enables the student to measure the properties of these devices and to verify their operating principles and uses in actual circuits. PREREQUISITES: 6018, 6023, and 6025

3 credits

6034 — Semiconductors and Transistors 2

A study of the circuitry and design of semiconductor devices commonly used in industry. Among the topics covered are servo controls, switching networks, regular circuits, and special amplifiers. The nature and basic design of these circuits are analyzed using the latest components available. PREREQUISITES: 6018, 6023, 6025, and 6033

3 credits

ELECTRONIC TECHNOLOGY

6019 — Fundamentals of Electronics 1

A course in electrical fundamentals similar to 6018 with emphasis given to topics most helpful in the further study of electronic technology.

5 credits

6024 — Basic Electronics 2

Similar to 6023 (Electrical Technology) with special attention to the requirements of electronic technology.

5 credits

6027 — Introduction to Computer Circuits

This course includes consideration of basic logical circuits, logical design, arithmetic and memory elements and input and output devices. Computer operations and programming are also briefly treated and the use of Boolean Algebra is emphasized in logical ways. PREREQUISITE: 2009, with a grade of "C" or better.

3 credits

6035 — Semiconductor Circuits 1

The primary emphasis of this course is on the multiplicity and variance of circuits (and hence, the emphasis is on systems consisting of multiple circuits) utilizing semiconductor devices. The course includes a brief review of such basic principles as relate to conductance in all types of semiconductor devices, be they diodes, transistors, semiconductor tetrodes, and/or multi-element devices comprised of several circuits in a single physical capsule. The brief review is facilitated by treating the subject matter from the standpoint of first-order approximations; that is, treating the diode or transistor as an ideal device. Second-order effects are also emphasized because these effects can predict, theoretically at least, the performance of a circuit, or a system of circuits, at least with a reasonable degree of accuracy. PREREQUISITE: 6024, with a grade of "C" or better.

3 credits

6036 — Electronic Instrumentation

This course focuses the student's attention on the measurement process, on basic electronic tests, and on the characteristics and capabilities of electronic instruments. It analyzes a number of basic electronic instruments to illustrate how they work, what they do, and what their limitations are. It includes general transient analysis and decibel conversions, use of Thevenin's theorem to determine the loading effects of ammeters and voltmeters, derivation of the frequency response of a peak detector, a-c bridges and their equations.

3 credits

6037 — Pulse Shaping Techniques

The fundamentals applying to nonsinusoidal pulse, timing, and switching circuits are presented. The theory is demonstrated by actual measurement and oscilloscope observation, and the circuits are analyzed mathematically in detail. Emphasis is placed upon Fourier and consecutive segment analysis; the ratio method of solving simple circuits; the application of circuit theorems; controlled distortion with differentiation and integration circuits; limiters, clippers, and clippers; multivibrators, blocking and shock-excited oscillators; basic sawtooth generators; gating and delay circuits.

3 credits

6038 — Ultra High Frequency Techniques

An introductory course in microwave theory and measurements which covers basic microwave theory and techniques and the applications of these techniques to measurement problems. A compact, logical description of physical concepts, mathematical formulations, measurement systems, and illustrative examples of ideas and measurement procedures is presented. Although this is basically a qualitative approach to microwave technique, it includes the necessary mathematical details for an adequate treatment of the fundamental principles. X-band wave-guide devices are described, but the measurements are applicable to the other wave-guide frequencies by appropriate substitutions.

3 credits

6178 — Electronics Lab 1

The laboratory work is designed to verify experimentally as much of the theory as possible that is studied in the fundamentals of electronics course which covers D.C. and A.C. with A.C. fundamentals. During this course the student learns to use all necessary test instruments and laboratory equipment so that he may be able to perform the experiments properly. Practical work at the College's AM and FM radio stations will supplement the broadcast phase of the course. The student will be given an opportunity to learn by experience the electronics of a broadcast station.

1 credit

6179 – Electronics Lab 2

Continuation of Laboratory Course 1. Experiments in this course deal with vacuum tubes, gas tubes, and solid state devices. These electronic devices are used in the study of such circuits as power supplies and filter networks; basic amplifiers including coupling methods, impedance matching, and negative feedback; oscillators. PREREQUISITE: 6178, with a grade of "C" or better.

1 credit

6180 – Electronics Lab 3

A continuation of Electronics Lab 2, this course treats in greater detail the specific usages of active circuit elements (i.e., vacuum tube or semiconductor diodes, triodes, etc.) in performing the basic functions of amplification, rectification, and/or oscillation. The important emphasis is on theoretical calculations, which purportedly predict (before actual circuit measurements are taken) the operating conditions (both A.C. and D.C.) which will prevail in the actual operation of the circuit. Equal importance is placed on the student's written Lab Report which compares, evaluates, and reconciles all deviations and discrepancies between theoretical and actual circuit performances. PREREQUISITE: 6179, with a grade of "C" or better.

1 credit

6181 – Electronics Lab 4

A continuation of Electronics Lab 3, the primary emphasis of this course is shifted upward to detailed analysis, theoretical prediction, and reconciliation of multi-circuits systems as these systems relate to the areas emphasized by the other Electronics course offerings consisting of Pulse Shaping Techniques, UHF Techniques, Communications, and Computer Circuit Fundamentals. Equal emphasis is placed on the student's written Lab Report. PREREQUISITE: 6180, with a grade of "C" or better.

1 credit

6212 – Semiconductor Circuits 2

As with semiconductor Circuits 1, the emphasis in this course is also on circuit systems. The course includes an overview (brief) of general, multi-stage systems performance, as well as a scan of systems performances in applications with definite frequency limitations. The analysis of systems performances, as enhanced or hindered by feedback utilizations, is here treated in greater and more realistic detail.

Most importantly, the emphasis, in this course, is on specific applications of circuit systems, in the areas emphasized by the other course offerings in Electronics; namely, in the areas of Pulse Shaping Techniques, UHF Techniques, Communications, and Computer Circuits. PREREQUISITE: 6035, with a grade of "C" or better.

3 credits

6213 — Communications Circuits 1

The aim of the course is to present information about the circuits processes and basic theories essential to the understanding of communications systems. Topics covered include: receivers, transmitters, transmission lines, antennas, and microwaves. Also the coverage of crystal, mechanical, and ceramic filters, single-side band techniques, information theory, radio telemetry, and solid circuitry is completed.

3 credits

6223 — Electronic Communications

The aim of the course is to present information about the circuits processes, and basic theories essential to the understanding of communication systems. Topics covered include receivers, transmitters, transmission lines, antennas, and micro waves. Also, the coverage of crystal, mechanical and ceramic filters, single-side band techniques, information theory, radio telemetry, and solid state circuitry.

3 credits

6225 — Electronic Licenses

Intensive drill on Federal Communications Commission license examinations together with preparation for the Massachusetts State Radio and Television Technician examinations. Open only to students who have satisfactorily completed three semesters in Electronics Technology or by special permission of the instructor.

3 credits

ENGINEERING TRANSFER

6049 — Special Projects in Engineering 1

Special projects in engineering under the direction of an instructor. PREREQUISITE: Permission of the Department Chairman.

1, 2, 3, or 4 credits

6050 — Special Projects in Engineering 2

Continuation of 6049. PREREQUISITE: Permission of the Department Chairman.

1, 2, 3, or 4 credits

6107 — Special Projects in Engineering Technology 1

Special projects in Engineering Technology under the direction of an instructor. PREREQUISITE: Permission of the Department Chairman

1, 2, 3, or 4 credits

6108 — Special Projects in Engineering Technology 2

Continuation of Special Projects in Engineering Technology 1 (6107). PREREQUISITE: Permission of the Department Chairman

1, 2, 3, or 4 credits

6227 — Engineering Thermodynamics 1

A classical presentation of the study of the laws of conservation of matter and energy, the three basic laws of thermodynamics and their application to batch and flow processes. Thermal properties of ideal and real gases, solids, and liquids as well as energy cycles, chemical reactions and phase equilibrium are presented. Development of the basic principles of thermodynamics.

3 credits

6228 — Engineering Thermodynamics 2

Continuation of Engineering Thermodynamics 1. Deals with the engineering applications. These include fluid mechanics, gas dynamics, gas and vapor power cycles, refrigeration, heat transfer and chemical reactions and equilibrium. PREREQUISITE: 6227

3 credits

6154 — Engineering Seminar 21

An introduction to basic procedures common to science and engineering with emphasis on basic computational methods, especially the slide rule and the digital computer. The course includes a survey of career possibility in certain fields of science and engineering, developed by means of outside lectures, field trips, and assigned reading.

4 credits

6175 — Engineering Seminar 22 — Computer

An introduction to the art of engineering. Techniques of solving engineering problems, developed by the student solving numerous actual engineering problems.

3 credits

6215 — Technical Illustration

Technical Illustration may be defined as drawing a view of an object in the third dimension according to blueprint specifications. Primarily, it is translation of orthographic blueprints into 3D drawings. Technical Illustration has been called "the eyes of science and industry." In general, technical illustrations are used for proposals, for presentations, or for publications. Extensive use is made of technical illustrations to show a new design or to point up design changes. Technical Illustration is relatively new. Valuable use of this is made in acquiring new contracts and in preparing training aids for new personnel. PREREQUISITE: Experience in Engineering Drawing

3 credits

6217 — Mechanics 1

Elements of statics and strength of materials. PREREQUISITE: 2086, Integral Calculus concurrently, 3015 — Physics 21

3 credits

6218 — Mechanics 2

Continuation of Strength of Materials. Elementary Kinematics of Mechanisms and Dynamics of Particles and Rigid Bodies. PREREQUISITE: 6217 — Mechanics 1

3 credits

6219 — Systems Analysis 1

Physical characteristics and mathematical models of system elements; techniques for writing and solving system dynamic equations. PREREQUISITES: 2354-57

4 credits

6220 — Systems Analysis 2

Concepts relating to transfer functions; digital and analog solutions of system equations, time and frequency domain analysis techniques and stability. PREREQUISITE: 6219 — Systems Analysis 1

4 credits

6221 — Introduction to Material Science

The atomic and molecular phenomena responsible for the behavior of materials. The relationship between the atomic structure of materials and their behavior is emphasized. PREREQUISITE: 3006 — Chemistry 22

3 credits

6224 — Engineering Measurements and Analysis

Introduction to engineering measurements and analysis, relating scientific principles to engineering applications, stressing experimental methods, data acquisition and processing. PREREQUISITES: 3015 — Physics 21 and 3016 — Physics 22, also one or both of 6217 and 6219 are preferred but not required.

3 credits

6230 – Technology Survey

Introductory survey of the engineering technologies. General scholastic and career orientation for the entering student. In addition, students spend four hours in each of the following departments: Automotive, Biomedical, Business, Data Processing, Construction, Environmental, Electrical, Electronic, Graphic Arts, Machine and Tool Design, Mechanical, Heat and Power, and Landscape. Each department will describe the type of work graduates from the department will be fitted for the job opportunities available. The department curriculum will be reviewed and the student will be exposed to typical classroom and laboratory situations. No prerequisite

3 credits

6231 – Fluid Mechanics

This course consists of a study of fluid statics and kinematics. A complete study of frictionless incompressible flow using Bernoulli's equation, the continuity equation and the momentum equation is presented and applied to various engineering problems. The concept of viscosity and laminar viscous flow is introduced using the Navier Stokes equation in rectangular and cylindrical co-ordinates. Pipe friction and the Reynolds number in laminar and turbulent flow are discussed. The boundary layer equations in laminar and turbulent flow are developed. CO-REQUISITE: 2020 – Engineering Mathematics.

3 credits

6232 – Fortran for Scientists and Engineers

This course is designed to offer an introduction to the computer language Fortran. The content of the course will include a brief introduction to the general theory of digital computers as well as Fortran programming. Fortran will be studied as an example of a computer language. Special attention will be placed upon using Fortran as a powerful tool in solving a number of diverse problems drawn from science and engineering. PREREQUISITES: 2311–13.

3 credits

6235 – Heat Transfer

A study of the fundamental laws of heat transfer by conduction, convection and radiation. Application of conduction and convection to insulation and heat exchanger design. Selected

one, two and three dimensional problems in conductive heat transfer are solved using analytical, graphical and numerical techniques. Heat transfer in laminar and turbulent boundary layers in compressible fluids are investigated. Radiative heat exchange is examined.
PREREQUISITE: 6231 – Fluid Mechanics

3 credits

6236 – Material Science Lab

This course is an introduction to mechanical testing and the metallography of metals and alloys.

1 credit

6241, 6242, 6243, 6244, 6245, 6246, 6247, 6248, 6249 – Programmed Engineering Graphics

6241 – Module 1

Instruments and their use, applied geometry, orthographic drawing and sketching.

1 credit

6242 – Module 2

Lettering, auxiliaries: normal and edge views, sections and conventions.

1 credit

6243 – Module 3

Intersections and developments, drawings and the shop working drawings.

1 credit

6244 – Module 4

Dimensions, notelimits, catalogues.

1 credit

6245 – Module 5

Introduction, electricity and batteries, schematics, assembly-disassembly.

1 credit

6246 -- Module 6

Power distribution Graphics: Electrical drafting, contractor drawings.

1 credit

6247 -- Module 7

Electronics Graphics: Electrical (Electronic Drafting), system design, special equipment.

1 credit

6248 -- Module 8

Architectural Graphics: Oblique drawings, drawing of structures, graphical vector analysis.

1 credit

6249 -- Module 9

Perspective drawings, shapes and shadows, presentation drawings.

1 credit

6251 to 6260 -- Machine Shop Techniques

6251 -- Module 1	Basic Shop Techniques
6252 -- Module 2	Advanced Lathe Operation
6253 -- Module 3	Advanced Milling Machine Operations
6254 -- Module 4	Tape Machine Operations
6255 -- Module 5	Grinding Machine Operations
6256 -- Module 6	Jig Boring
6257 -- Module 7	Elementary Welding
6258 -- Module 8	Heat Treating
6259 -- Module 9	Tig Welding
6260 -- Module 10	Forging Techniques

PREREQUISITES: Module 1, 7-8 -- none. Remaining modules by permission of instructor.

1 credit per module

ENVIRONMENTAL TECHNOLOGY

6184 — Environmental Unit Processes

A study of the chemical and biological processes commonly used to control environmental pollution. It includes such topics as biological oxidation, photosyntheses, precipitation, coagulation, disinfection and combustion. **PREREQUISITES:** 3086 and 3088 Two lecture hours and one three-hour laboratory.

3 credits

6185 — Air Quality Meteorology

An investigation of the movement of air masses and their effect on the movement, diffusion and concentration of air pollution. Visible emissions will also be discussed. The planning and interpretation of surveys and the evaluation of plumes will be considered. Two lecture hours, one three-hour laboratory.

3 credits

6187 — Water Quality Unit Operations

A study of the physical processes utilized in water purification and supply. Topics of investigation include filtration, sedimentation, coagulation, aeration, chlorination, bacteriological control, softening and storage. Equipment operation and maintenance will be considered. **PREREQUISITES:** 3086 and 2331 One lecture hour and two three-hour laboratories.

3 credits

6189 — Water Supply and Distribution

An investigation of municipal water supply from source to use. Topics include water sources, demand, storage and transmission; watershed protection; water quality; distribution theory including hydrostatics, measuring devices; flow and pumps. **PREREQUISITE:** 2331; two lecture hours, one three-hour laboratory.

3 credits

6190 — Systems Operation and Maintenance

An investigation of sewage treatment plant equipment with emphasis on equipment maintenance and preventive maintenance programs. Topics will include piping systems, valves, screens, filters,

mixers, feeders, pumps, motors and switchgear. Typical operating regulations, forms and reports will also be studied. One lecture hour, two three-hour laboratories.

3 credits

6191 — Process Problems 1

An introduction to the analytical approach to problem solution and a familiarization with various calculation aids. It will include turning word problems into equations, problem solving, exponential quantities, graphing and chemical stoichiometry. Three lecture hours.

3 credits

6192 — Treatment Plant Unit Operations

An investigation of the physical and chemical processes utilized in the treatment of liquid wastes. It includes such topics as collection and transportation systems; hydraulic theory; flow measurement; pumping; treatment methods; solids digestion; solids processing and disposal; polishing and industrial waste treatment. PREREQUISITES: 3087, 2331; one lecture hour, two three-hour laboratories.

3 credits

6197 — Air Quality Control Processes

A study of the processes utilized to reduce or eliminate pollution of the atmosphere. Topics such as combustion, precipitation, filtration, screening, catalysis, adsorption and absorption are investigated. PREREQUISITES: 2331, 3086, one lecture hour, two three-hour laboratories.

3 credits

6200 — Air Sampling and Analysis

An investigation of the equipment and techniques used in atmospheric sampling and of the instruments used to analyze the samples. Topics include the behavior of gases and suspended particles, sampling methods and equipment, electrical analysis, microscopy, spectroscopy, and chromatography. PREREQUISITES: 3087, 2331; one lecture hour, two three-hour laboratories.

3 credits

6201 — Industrial Health and Safety

An investigation of the procedures and attitudes required so that man may safely work in the vicinity of industrial processes and equipment. Topics include the man-machine interaction, development of mental attitudes, housekeeping and the effect of the process atmosphere on health. PREREQUISITE: 3086, three lecture hours.

3 credits

6226 — Process Problems 2

A continuation of Process Problems 1 with an emphasis on stoichiometry and an introduction to process problems and fortran programming. PREREQUISITES: 6191, 3086, 2331; two lecture hours, two 2-hour laboratories.

4 credits

6233 — Basic Instrumentations

A study of electrical, electronic and pneumatic theory as applied to instrumentation used for the measurement and control of process variables. Instrumentation and measurement terminology is introduced. Laboratory experiments are performed to reinforce and clarify the theoretical principles. PREREQUISITE: 2331; two lecture hours; one three-hour lab

3 credits

6234 — Industrial Instrumentation

A study of the operating principles and application of industrial instrumentation as related to environmental control processes. It will include devices for the measurement of such variables as pressure, temperature, level, flow, conductivity, turbidity, wind velocity, smoke density, volume and time, plus the automatic transmission and recording of data. The laboratory work will emphasize set-up, use, trouble shooting and maintenance. PREREQUISITE: 6233; two lecture hours, one three-hour laboratory.

3 credits

GRAPHIC ARTS TECHNOLOGY

6062 — Printing Management

This course builds a framework to aid in making correctly the many decisions which are the essence of good management of a printing plant, large or small. The principles of finance, production control, cost control, supervision, industrial relations, estimating, pricing and planning for growth are stressed by basic theory and illustration of the application of this theory.

3 credits

6075 — Process Photography

A lecture and laboratory course presenting the latest technical information and techniques in half-tone photography consisting of conventional half-tone, duo-tone, and various special and creative effects.

The course is further designed to impress upon the student cameraman the interrelationships of his own field and that of the stripper, platemaker, and press operating personnel.

2 credits

6076 — Process Photography 2

A continuation of Process Photography 1. PREREQUISITE: 6075

2 credits

6077 — Graphic Arts Processes 1

A fundamental survey of offset lithography with the objective of acquainting the student with the various techniques and procedures of this printing process. Laboratory experiences are provided in the areas of process camera operation, black and white, stripping, platemaking, and principles of operation of offset presses.

2 credits

6078 — Graphic Arts Processes 2

A study of proofing and platemaking including critical analysis of various types of plates. Instruction includes operation of presses and related equipment to varied job specifications. Introduction to silk screen work is also part of the laboratory exercise. PREREQUISITE: 6077

2 credits

6083 — Layout and Copy Preparation

Areas of balance, proportion, and proper paste-up procedures are covered. The student also gains an understanding of the tools and materials used in layout and paste-up.

2 credits

6114 — Typography and Copy Preparation

Theory and practice emphasizing craftsmanship and appreciation of typographic principles. Laboratory work includes creative projects in typographic composition for effectiveness and aesthetic value.

2 credits

6144 — Production Techniques 1

All process courses taught in the graphic arts technology program are based on progressively more difficult exercises which the student performs in order to reach a predetermined achievement level. Production technique courses are designed to provide the student with actual live-job production responsibilities in the areas of layout and type composition, camera and stripping, platemaking, and presswork.

3 credits

6145 — Production Techniques 2

Continuation of 6144.

3 credits

6174 — Photography I

Technical and aesthetic aspects of camera operation, exposure negative development, printing, and enlarging. Emphasis is placed on sound craftsmanship, personal selection, arrangement, and discovery of forms necessary to sensitive photographic expressions. Motion picture equipment will also be a part of this course. The student will learn the basic principles involved in television photography.

3 credits

6203 — Advertising Design

A course designed to further develop the student's ability to create layouts for advertising. The student gains further knowledge in

the arrangements of headlines, copy blocks, photographs, artwork, logotypes, borders, and other typographic devices that serve as a preview for the client and a guide for the illustrator, letter artist, engraver, typesetter and printer. The lab portion of the course will acquaint the student with the mechanical operations of the typographer, artist, photographer, process cameraman and pressman in relation to what must be specified when ordering any of their services in the production of an advertisement.

2 credits

6204 — Offset Stripping and Plate Making

This course is centered on the art of assembling photographic films into the exact arrangement that will appear on the printing plates, maintaining at times accuracy of three-thousandths of an inch. The course includes detailed information and techniques utilized in both black and white color stripping. In addition to the stripping operations, the student in this course will become involved in the producing of various types of offset plates and several methods of photo-composition, including preparation of various types of layouts and operations of photo-composing machines.

2 credits

6205 — Offset Presswork

This course includes the principles and procedures of registration, blanket and plate preparation and maintenance, operation of inking and dampening system, delivery operation and running the press. The materials also cover the common press troubles, including their recognition and solution, ink-water balance, squeeze pressures, and other technical press operations and adjustments.

2 credits

6206 — Advanced Typography

The objective of this course is to demonstrate what typography is, and particularly what it is to the modern graphic designer. The student is made aware of the many influences that have shaped modern typography, with particular emphasis on the effects of technology and contemporary art movements. Laboratory work includes creative projects in typographic composition for effectiveness and aesthetic value.

2 credits

6211 – Photography 2

This course is a continuation of Photography 1 with more emphasis being placed on the aesthetic aspects of photography; including subject selection; composition; lighting control; material selection; print finishing and mounting. Students will also be able to work in any of the specialized fields of photography that they desire, such as portraiture, still life, photo journalism, etc.

3 credits

HEAT AND POWER TECHNOLOGY

6020 – Fundamentals of Electricity 331

A course in electrical fundamentals similar to 6018 (Electrical Technology) with special consideration for material underlying electrical applications in heating and ventilating technology.

4 credits

6040 – Control Circuits and Applications 1

A combination lecture and laboratory course which presents the basic controls and control systems found in domestic hot water, steam, and forced warm air heating systems. In addition, instruction is given in the wide variety of burners used by the industry, how the integral parts of these burners function, and how to test and repair them. Internal and external schematic wiring diagrams are studied in detail. The laboratory allows the student to wire, safety check, and fire test units, both old and new, as found in today's industry. Two hours lecture, three hours of laboratory. PREREQUISITES: 6020 Fundamentals of Electricity 331

3 credits

6041 – Control Circuits and Applications 2

A combination of Control Circuits and Applications 1. Basic electronic, solid state, and programming controls used in the heating industry are introduced. A number of these controls are analyzed to illustrate their operation. Industrial schematic wiring diagrams are studied and the student learns to interpret line and ladder type of diagrams. Field trips are arranged to observe control systems in

operation. Laboratory experience includes installing and piping of burners, the wiring and designing of controls, with emphasis on combustion testing to meet today's pollution control requirements. Two hours lecture, six hours of laboratory. PREREQUISITE: 6040 Control Circuits and Applications 1.

4 credits

6042 – Heating System Design

A combination lecture and laboratory course designed to acquaint the student with proper principles used in designing hydronic heating systems. A thorough coverage is made of heat transfer through building materials essential in the calculations of heat losses, through both residential and commercial structures. Instruction is given in the layout and construction of series loop, one pipe, and reverse return hydronic heating systems. The student will develop the knowledge required to design a good, efficient hydronic system. Two hours lecture, one three-hour laboratory.

3 credits

6043 – Advanced Heating System Design

A continuation of Heating System Design. Instruction is given in the layout, construction and distribution of steam heating systems. Calculations of domestic hot water requirements in residential and institutional buildings are covered in detail. Emphasis is placed on calculation of heat gain in addition to heat loss. Architectural and construction blueprint reading on light commercial and industrial structures is introduced. Two hours lecture, three hours of laboratory. PREREQUISITE: 6042 Heating System Design.

3 credits

6044 – Hydronic Layouts and Construction

A combination lecture and laboratory program to introduce the student to the basic theories and specialized skills essential for the construction of sound, practical, functional and competitive wet heat installations. Topics include specifications and data for pipe and respective components, review of metal tubing and fittings, interpretation of basic architectural specifications and working drawings, a comparison of sample applications as they relate to current principles and practices. A summary assignment obligation to allow the student to express and illustrate individual creative layout and design. One hour lecture, three hours of laboratory. PREREQUISITE: 6073 Engineering Graphics 331.

2 credits

6045 — Heating and Power Laboratory

A continuation of the development of larger, more complex control systems required by certain states and insurance associations. Emphasis is placed on studying the latest in self-checking programming controls used with gas, oil, and combination gas-oil burners. The use of factory units brings this application into focus. Complete testing and servicing are emphasized. Periodically, factory representatives are invited to lecture on the latest, up-to-date equipment in this constantly changing industry. Qualified students are eligible to take the Massachusetts examination for a Commercial-Industrial license. Two hours lecture, six hours laboratory. PREREQUISITE: 6041 Control Circuits and Applications 2.

4 credits

6073 — Engineering Graphics 331

A course that deals with the graphic representation of physical objects and relationships. It is designed to provide the student with fundamental knowledge of the principles of mechanical drafting and to develop necessary skills in the basic techniques of using special tools and equipment. Subjects covered include lettering, orthographic projection, dimensioning, simple scale drawings, developed surface, geometric construction, and detail and assembly drawings. One hour lecture, three hours of laboratory.

2 credits

6074 — Engineering Graphics 332

A continuation of Engineering Graphics 331. PREREQUISITE: 6073

2 credits

6110 — Mechanical Skills and Procedures 1

An introductory course designed to provide for the development of the necessary fundamental technical and manual skills required in the Heating and Power, Refrigeration and Air Conditioning fields. Weekly technical lectures, demonstrations, and/or blueprint reading problems are conducted to acquaint the whole class with accepted industry practices and procedures.

The corresponding laboratory enables the student to achieve

practical exposure to operations and assignments involving use and care of hand tools, measuring devices, basic machine operations, tubing and piping layout and erection, threaded-soldered-welded construction, metal fabrication and electric circuit wiring. Two one-hour lectures, and two three-hours of laboratory.

4 credits

6111 — Mechanical Skills and Procedures 2

An advanced course that is predominantly a laboratory program. Instruction is directed toward the student achieving competency in specialized skill areas involving procedure, technique, experiment, application, service and test. Emphasis is placed on laboratory assignments, scheduled specifically to allow for adequate work experience. The various training phases being erection and fabrication of residential thermal devices, unit assembly of hardware components, combustion equipment installation, control safeguard selection and wiring hookup, efficiency testing of units and the documentation of results. Two three-hours of laboratory.

PREREQUISITE: 6110 Mechanical Skills and Procedures 1

2 credits

6155 — Power Plant Operation 1

To understand the principles of high pressure power plants and their related accessories, an in-depth study must be made of the basic thermodynamics involved. This includes the vaporization of liquids and the computations of their properties through the use of Steam Tables; the relationship of pressure-volume and temperature-entropy diagrams to power engineering; and the properties of air and water are studied for combustion and the corrosive effects on steel. Power plant layouts, high pressure steam generators and their related accessories are extensively covered. This is presented by a combination of lecture/ laboratory assignments with exposure to power plants in the area and the use of the STCC power plant as a functioning laboratory. One one-hour lecture; three one-hour labs

2 credits

6156 — Power Plant Operation 2

With the principles learned in Power Plant Operation 1, this course is designed to familiarize the student with the operation, maintenance involved, code requirements and the efficiencies of

power plants. Attention is given to steam generator construction; safety devices, automatic stop and check and other valves, hydraulics and pumps, feedwater heaters, piping systems, expansion methods, and traps are extensively studied. Preparation is made for a Massachusetts State Operator's license examination through study and exposure to the STCC power plant. **PREREQUISITE:** 6155 Power Plant Operation 1. One one-hour lecture; three one-hour labs

2 credits

6222 – Fundamentals of Air-Conditioning

Basic refrigeration cycles are studied initially to give a clear understanding of the transfer and absorption of heat. The properties and characteristics of the most common refrigerants, R-11, R-12 and R-22, showing absorption qualities, vaporization and condensing pressures/temperatures are stressed. The similarities between air-conditioning and refrigeration systems and the functions of their major components are demonstrated on instructional test stands. Electric circuits, controls, motors and compressors are studied in detail. Conditioned air, heated, cooled, humidified, dehumidified, mixed and the use of the psychometric chart, showing the changes in air quality, is illustrated. Primarily, a lecture series with audio-visual aids and exposure to area air-conditioning plants and the extensive use of the air-conditioning system at STCC. Three one-hour lectures.

3 credits

LANDSCAPE TECHNOLOGY

6085 – Nursery Propagation and Practice

A course dealing with the procedures used in propagating and growing plant materials. Lectures deal with the theoretical aspects of growing, and the laboratories are devoted to greenhouse and field work. Several field trips are taken to commercial nursery operations in the area. Two hours lecture, one three-hour laboratory.

3 credits

6086 — Landscape Design 1

Primarily a laboratory course, dealing with the principles involved in good landscape design. Students are exposed to spatial relationships, the best use of space for various functions, the use of color, and analysis of needs in specific design situations. PREREQUISITE: Engineering Graphics 6140. One hour lecture, two two-hour labs

3 credits

6087 — Landscape Design 2

A continuation of Landscape Design 1, used to assemble knowledge gained in previous design and plant courses, with the objective of producing workable landscape plans. The course is taught with the idea that often the student will be carrying out the plans of others. It will enable him to interpret accurately and, if needed, make changes that will not destroy the original intent of the designer. PREREQUISITE: 6086 L.D. 1 One hour lecture, two two-hour labs

3 credits

6088 — Principles of Horticulture

A basic course in general horticulture, introducing the student to the fundamentals of soil study and use, insect and disease control, and plant production techniques. The lectures cover the theoretical aspects of horticulture, and the laboratories are used for field trips and practical work. Two hours lecture, one two-hour laboratory.

3 credits

6089 — Landscape Operations (Planting)

This course deals with the principles involved in estimating, carrying out, and maintaining landscape work. The lectures are used to introduce and discuss the work areas involved, and laboratory time is spent in moving and planting trees and shrubs, estimating work, and the use and maintenance of machinery used in this type of work. Two hours lecture, one two-hour laboratory.

3 credits

6090 – Tree Maintenance

A course dealing with the basic aspects of arboriculture. The lectures are concerned with tree growth and maintenance, and the laboratories are used to instruct in tree climbing, pruning and repair, and feeding techniques. Two hours lecture, one three-hour laboratory.

3 credits

6094 – Construction Methods (Landscape)

A study of the equipment, materials, and methods used in constructing landscape features such as walls, walks, drives, fences, and terraces. Considerable field work is involved, in which the students lay out and construct features as mentioned above. Two hours lecture, one three-hour laboratory. PREREQUISITE: 6093 Surveying 721

3 credits

6140 – Engineering Graphics 721

A course in mechanical drafting, stressing the media and techniques commonly used in the preparation of landscape plans. The use of instruments, lettering, and line technique is covered first, followed by the development of isometric and perspective drawings. Working in 3-dimensions is stressed, so that the student may best visualize spatial relationships in future landscape design courses. Three two-hour labs.

3 credits

MACHINE AND TOOL DESIGN TECHNOLOGY

6054 – Manufacturing Processes 1

This course is designed to provide the student with theoretical as well as practical experience involving manufacturing processes. The processes include foundry processes, hard mold casting processes, powder metallurgy, primary metal working processes, metal shearing and forming, welding and allied processes. Economics of metal cutting in addition to measurement and inspection using the more common measuring tools are introduced. The common metal cutting tools are covered with laboratory experiments with emphasis on speeds, feeds, finishes, and tolerances.

3 credits

6055 — Manufacturing Processes 2

This course is a continuation of Manufacturing Processes 1 providing theory and practical experience in metal cutting processes. Laboratory experiments involving turning operations, drilling, milling, shaping, grinding, sawing and benchwork. A special emphasis is placed on process planning involving actual selected jobs in relation to process capability, sequence of operations, set-up time estimating, feed and speed calculations, and proper machine tool selection.

3 credits

6064 — Industrial Materials

An introduction to engineering materials and their properties. Emphasis is placed on the factors which determine material properties and the process by which these properties can be changed in a controlled manner. Materials covered include steel, cast iron, non-ferrous metals and alloys, plastics, rubber, and some other non-metallics.

3 credits

6065 — Tool Design 1

This course is divided into two parts. The first part covers the principle of detailing parts for interchangeable manufacturing. The areas of limits, fits, tolerance analysis and surface finishes are covered, as well as the heat treatment of the components. The second part covers introduction to Tool Design, the design of gauges and cutting tools. Lectures and laboratory applications are combined to help the student gain knowledge and experience necessary to design tools that are used for mass production. PREREQUISITES: High school algebra, trigonometry, and drafting. The student makes use of manufacturers' catalogs. Throughout the course, the students meet for two one-hour lectures and two three-hour labs'

4 credits

6066 — Design of Machine Elements

A course in which machine design principles are studied and methods of calculating the required size and shape of various machine parts are developed. Selection of proper materials is given consideration. Stress and strain, design stresses, keys and fasteners, threaded numbers, welded and riveted connectors, and shafts are considered. The principles of motions, velocities, and acceleration of various linkages are considered. The students meet for 2 one-hour lectures and 2 three-hour labs.

4 credits

6067 – Machine Design 1

The course involves the study of disk and cylindrical cams, gears, gear trains, pulleys, and couplings. Interference, contact ratio, strength and dynamic loading of gears are considered and simple reverted, compound, and epicyclic gear trains are worked out in detail. The student is given the opportunity to integrate knowledge acquired during the machine design program by carrying out projects in which he designs complete machines or sub-assemblies. He is required to analyze the problem, gather pertinent information, carry out the necessary mathematical operations, make working drawings, and check his work. Throughout the course, he is encouraged to use his own judgment and initiative to the maximum extent possible. Students meet for two one-hour lectures and two three-hour labs per week.

4 credits

6113 – Tool Design 2

This course is the continuation of course 6065, Tool Design 1. It covers the design of jigs, milling fixtures, grinding fixtures, lathe fixtures, boring fixtures, miscellaneous fixtures, blanking dies, and other dies. Laboratory problems involve the design and complete working drawings of the above. Industrial standards are used throughout. PREREQUISITE: 6065 Students meet for two one-hour lectures and two three-hour lab periods a week.

4 credits

6150 – Fluid Power

The basic theory of both hydraulics and pneumatics is developed in relation to either driving or controlling industrial machinery. Fluid power equipment is discussed from the standpoint of application. Skill is developed in the layout and understanding of fluid power circuits. PREREQUISITES: 2331, 2333

3 credits

6157 — General Engineering Laboratory 1

The basic purpose of this course is to reinforce student understanding of material presented in the career-oriented lecture courses. The areas of experimentation include materials, testing and evaluation, stress analysis, and work measurement. Techniques of data reduction and report preparation are included.

2 credits

6158 — General Engineering Laboratory 2

A continuation of 6157. Additional areas of experimentation include fluid power, quality control and numerical machine control.

2 credits

6251 to 6260 — Machine Shop Techniques

6251 — Module 1	Basic Shop Techniques
6252 — Module 2	Advanced Lathe Operations
6253 — Module 3	Advanced Milling Machine Operations
6254 — Module 4	Tape Machine Operations
6255 — Module 5	Grinding Machine Operation
6256 — Module 6	Jig Boring
6257 — Module 7	Elementary Welding
6258 — Module 8	Heat Treating
6259 — Module 9	Tig Welding
6260 — Module 10	Forging Techniques

PREREQUISITES: Module 1,7,8 — none. Remaining modules by permission of instructor.

1 credit per module

6232 — Fortran for Scientists and Engineers

This course is designed to offer an introduction to the computer language Fortran. The content of the course will include a brief introduction to the general theory of digital computers as well as fortran programming. Fortran will be studied as an example of a computer language. Special attention will be placed upon using Fortran as a powerful tool in solving a number of diverse problems drawn from science and engineering. PREREQUISITES: 2311-13

3 credits

MECHANICAL TECHNOLOGY

6052 — Engineering Analysis 1

An introduction to problem analysis and problem solving techniques as applied to engineering and industrial technology. The course includes familiarization with computational devices for problem solving such as the slide rule, desk top programmable calculator and electronic digital computer.

3 credits

6054 — Manufacturing Processes 1

This course is designed to provide the student with theoretical as well as practical experience involving manufacturing processes. The processes include foundry processes, hard mold casting processes, powder metallurgy, primary metal working processes, metal shearing and forming, welding and allied processes. Economics of metal cutting in addition to measurement and inspection using the more common measuring tools are introduced. The common metal cutting tools are covered with laboratory experiments with emphasis on speeds, feeds, finishes, and tolerances.

3 credits

6055 — Manufacturing Processes 2

This course is a continuation of Manufacturing Processes 1 providing theory and practical experience in metal cutting processes. Laboratory experiments involving turning operations, drilling, milling, shaping, grinding, sawing, and bench work. A special emphasis is placed on process planning involving actual selected jobs in relation to process capability, sequence of operations, set-up time estimating, feed and speed calculations, and proper machine tool selection.

3 credits

6056 — Applied Mechanics

This course enables the student to become familiar with standard tables and formulas used to calculate size requirements or load limitations of structural units. Beams, columns, braces, trusses, frames, and similar components are considered.

3 credits

6059 — Work Simplification

A broad approach to the use of motion and time study in industry. The uses of various types of charts and operational processes in general problem solving are developed. Typical problems requiring the application of operational analysis are undertaken. Consideration is also given to the work place, the work area, and to human engineering. The problem solving technique of evaluating alternate solutions is stressed.

3 credits

6061 — Production Control

General consideration is given to various phases and elements of production control which are later applied to continuous process companies and typical job shops. Several problem cases serve as a basis for classroom discussion. In addition to a general introduction involving various types of manufacturing plants and their respective products, the course includes a study of the elements which contribute to a successful production control program. Production forecasting, product development, control of materials, routing, scheduling, dispatching, and follow-up are studied in sequence in terms of their significance and their relationship to production control.

The course is based upon the idea that there is no standard production control procedure applicable to all manufacturing companies, but that there is a correct production control procedure which can be developed for any company, large or small.

4 credits

6064 — Industrial Materials

An introduction to engineering materials and their properties. Emphasis is placed on the factors which determine material properties and the process by which these properties can be changed in a controlled manner. Materials covered include steel, cast iron, non-ferrous metals and alloys, plastics, rubber, and some other non-metallics.

3 credits

6150 – Fluid Power

The basic theory of both hydraulics and pneumatics is developed in relation to either driving or controlling industrial machinery. Fluid power equipment is discussed from the standpoint of application. Skill is developed in the layout and understanding of fluid power circuits. PREREQUISITES: 2331, 2333

3 credits

6157 – General Engineering Laboratory 1

The basic purpose of this course is to reinforce student understanding of material presented in the career-oriented lecture courses. The areas of experimentation include materials, testing and evaluation, stress analysis, and work measurement. Techniques of data reduction and report preparation are included.

2 credits

6158 – General Engineering Laboratory 2

A continuation of 6157. Additional areas of experimentation include fluid power, quality control and numerical machine control.

2 credits

6251 to 6260 – Machine Shop Techniques

6251 – Module 1	Basic Shop Techniques
6252 – Module 2	Advanced Lathe Operation
6253 – Module 3	Advanced Milling Machine Operations
6254 – Module 4	Tape Machine Operations
6255 – Module 5	Grinding Machine Operation
6256 – Module 6	Jig Boring
6257 – Module 7	Elementary Welding
6258 – Module 8	Heat Treating
6259 – Module 9	Tig Welding
6260 – Module 10	Forging Techniques

PREREQUISITES: Module 1,7,8 – none. Remaining modules by permission of instructor.

1 credit per module

RADIOLOGIC TECHNOLOGY

6166 – Radiologic Technology 1

The didactics and college lab are done in the mornings, and the practicum at the affiliating hospitals in the afternoons. The student learns the correct positioning and exposures for the extremities, and simultaneously delves into the equipment used such as films, screens, grids, cones, processing and elementary safety precautions, with regard to ionizing radiation and high voltage electricity. All this is inculcated by lecture, demonstration, and by the students' performing these things.

4 credits

6167 – Radiologic Technology 2

This is a continuation of Radiologic Technology 1, the difference being that we extend our knowledge of positioning and exposures to include the trunk. The format is the same as 6166 – college in the mornings and hospitals in the afternoons. We delve deeper into the principles of X-ray, covering the prime factors of radiology and the factors affecting the quality of a radiograph. Again lecture, demonstration, and labs by the students are the means of putting this over. PREREQUISITE: 6166

4 credits

6168 – Radiologic Technology 3

Starting with this semester, students attend the hospitals in the mornings and the college in the afternoons, thus exposing them to the types of examinations usually done in the mornings such as those requiring fasting or preparation. Positioning and exposures for the skull are covered during the semester, together with special views of the rest of the body. Some special examinations are covered, and special equipment is discussed such as tomography, rapid film changers, teleoroentgenography, spot scanograms, etc. Lectures, demonstrations, and practice are used again.

More detailed knowledge of safety is imparted and this is better understood because of the Physics they are having. PREREQUISITES: 6166, 6167

4 credits

6169 – Radiologic Technology 4

During this semester the rest of the special procedures are done together with a complete revision of all positioning and principles of radiographic exposure. A mock Radiologic Technology examination is given towards the end of this semester so that students may have an idea of how they might fare in the national boards.

Lectures, demonstrations, and labs and extra practicum are utilized. PREREQUISITES: 6166, 6167, 6168

6 credits

6207 – Orientation and Professional Ethics

History of Radiology and Present Status
Radiology in the General Hospital and Patient Contacts
English and Metric Applications in Radiology
Theory of Filming and Fluoroscopy

2 credits

6208 – Fundamentals of Radiologic Technology

Observations and Demonstrations in Radiographic and
Fluoroscopic Practices
Darkroom Indoctrination

4 credits

6209 – Principles of Isotopes and Therapy

Special Procedures
Medical Use of Radio-Isotopes
Radiation Therapy (Basic)

2 credits

6210 – Application of Radiologic Technology

Film Critique
Special Procedures

4 credits

TELECOMMUNICATIONS TECHNOLOGY

6290 — Current Radio and Television Broadcasting

An introduction into the fields of radio and television broadcasting, a general survey of the media including history, government control and regulations, present and future effects and influences on society, career opportunities, field trips to area broadcast facilities, and assistance for obtaining the FCC third class radio telephone permit.

3 credits

6291 — Broadcast Laboratory

Working in actual radio studios for developing basic skills necessary for broadcasting to include nomenclature of equipment, terms used in broadcasting, and practical work in all broadcast positions. Laboratory sessions will be set up for recording and practice, and tapes will be utilized for self-criticism.

1 credit

6292 — Radio Production and Programming

A classroom study of program types for commercial and educational radio stations. Students will learn the current techniques that go into making up programs, formats, etc. All positions and various duties found in the broadcast production field will also be taught. Guest lecturers from the broadcast industry as well as its allied field, will be a necessary part of this program.

3 credits

6293 — Radio Workshop

Skills learned in the classroom put to practical work in operating the on-campus radio station, WTCC-AM. The student will fill various positions in the production departments on a rotating-basis.

1 credit

6294 — Television Production Techniques

Advanced training in television programming and production, creation of television programs from start to finish. Learning various duties and functions of a director, producer, video switcher, etc.

3 credits

6296 – Internship (Radio)

Work and study situations at radio station WTCC-FM, the on-campus educational station. The student will fill various duties in management positions in the station's engineering department.

1 credit

6297 – Communications Circuits

Conventional wireless communications circuits are treated in detail together with radar and other pulsed systems. Problems of noise, modulation, and side band suppression are explored. Theoretical considerations of radiation and propagation together with antennas are introduced.

3 credits

6298 – Internship (Television)

The student will perform various duties in the television engineering department in numerous work and study situations at WGBY, the on-campus public service television station. The student will be under the direction of the chief engineer and report his progress to the broadcast department chairman.

1 credit

6299 – Broadcast Journalism

Basic principles and practice in gathering, evaluating and writing news stories, selecting, editing, and organizing news material from the wire service and preparing for presentation on the air.

3 credits

6300 – Radio and Television Announcing

Announcing techniques before the microphone, making audio recordings and auditions, learning the proper voice projection with expression of grammar, pronunciation, regional and foreign accents and other speech problems.

1 credit

6301 – Broadcast Station Operation and Maintenance

Advanced training in television programming and production, creation of television programs from start to finish. Learning various duties and functions of a director, producer, video switcher, etc.

3 credits

6302 — Television Production and Direction

Production skills and introduction to television are offered in this course. The basic program process in television from original idea to finished program. Training and procedure involved in the technique of television production such as lighting, stagecraft, camera, etc.

3 credits

6303 — Principles of Broadcasting, Advertising, and Sales

A basic course exploring the general nature of advertising, its role in modern economy, and the principles and application of all phases of broadcast advertising. The philosophy and techniques of personal selling, including an investigation of managerial policies, sales administration, and methods used in the broadcast field.

3 credits

6304 — Advanced Television Production and Direction

Putting radio skills learned in class to practical work. Actual work in the school's AM and FM stations in all phases and duties on a rotating basis, utilizing television skills learned in class by working with closed circuit television and eight mm film production.

3 credits

6305 — Broadcast News & Public Affairs

Legal, ethical, and practical considerations involved in selecting, preparing, and presenting news broadcasts, documentaries, editorials, and interview programs for radio and television.

3 credits

6306 — Radio Production and Programming

A classroom study of program types for commercial and educational radio stations. Students will learn the current techniques that go into making up programs, formats, etc. All positions and various duties found in the broadcast production field will also be taught. Guest lecturers from the broadcast industry, as well as its allied fields, will be a necessary part of this program.

3 credits

6307 — F. C. C. License Preparation

An introduction into the fields of radio and television broadcasting, a general survey of the media including history, government control and regulations, present and future effects and influences on society, career opportunities, field trips to area broadcast facilities, and preparation for obtaining the F.C.C. radio telephone permit.

3 credits

HEALTH

— 7000 SERIES —



7002 — Foundations of Health Services

A review of local, state, and world health is presented as an interdisciplinary approach to health needs and institutions. The role and qualifications of several levels of health workers and their relationship with one another and the rest of society help to create an understanding of how society mobilizes its forces to overcome health problems. Health concepts are explored, preventive health measures are emphasized, and the disease process studied.

3 credits

7003 — Medical Lectures

This course presents the tissue changes resulting from trauma, disease, tumors, and degenerative processes. A series of lectures acquaint the student with the orthopedic, neurological, and general medical conditions she will encounter in treating the patient. PREREQUISITE: Anatomy and Physiology 1 and 2 (3090 and 3091)

3 credits

7004 — Sterilization/Sanitation

Basic knowledge of bacteriology, methods of sterilization, and sanitary regulations for beauty salons.

1 credit

7005 – Light Therapy

Training in application of mechanics such as infra-red visible and invisible radiation, effects of ultra-violet rays, proper application of high frequency “violet ray,” and care of electrical equipment.

1 credit

7006 – Dynamics of Human Motion

This course is designed to develop an understanding of the dynamics of human motion through the study of muscles and joints. PREREQUISITE: Anatomy and Physiology 1 (3090)

3 credits

7007 – Foundations of Operating Room Techniques 1

A combined lecture and laboratory course which develops competency in the performance of certain generally accepted routine procedures and techniques. Units in this course include: Related Nursing Procedures, Medical Terminology, Human Relations, and First Aid.

5 credits

7008 – Operating Room Techniques and Procedures 2

A general course presenting material in a sequence that will coincide with the practical experience of the technician in the operating room and delivery room.

3 credits

7009, 7010 – Inhalation Therapy Theory and Clinical Practice 1, 2

A two-part presentation of medical lectures and supervised clinical practice.

6 credits each

7011 – Introduction to Respiratory Therapy Theory

Combined clinical application of Respiratory Therapy and lecture series related to abnormal pulmonary pathology, pulmonary function testing, respiratory therapy, physical therapy, rehabilitation, and evaluation of respiratory patients. PREREQUISITES: 7078 and 7081

3 semester hours

7012 – Inhalation Therapy Applications/Clinical Sciences

A four-part presentation of the applications of basic sciences related to Inhalation Therapy. This includes laboratory mathematics, physical sciences, anatomy, physiology, pathology of the cardio-vascular and respiratory systems, and pharmacology. A second part embodying the clinical applications of inhalation therapy as applied to medicine, obstetrics, pediatrics, general-thoracic surgery, neuro-surgery, and emergency procedures are encountered in the hospital.

6 credits

7017 – Field Work and Studies 1

Introduction to Field Work and Studies. General introduction to community service agencies, historical development, organization patterns, role and function in community, client-agency patterns, recording and reporting, federal-state-local participation and support. Multi-service, coordinated concepts will be emphasized.

4 credits

7018 – Field Work and Studies 2

Continuation of lectures and class discussions with field trips to community service organizations. PREREQUISITE: 7017

4 credits

7019 – Field Work and Studies 3

A rotating supervised practicum in selected community service organizations is planned for students. PREREQUISITES: 7017 and 7018

3 credits

7020 – Field Work and Studies 4

Continuation of 7019. PREREQUISITES: 7017, 7018, 7019

6 credits

7021 – Seminar and Review

Weekly seminars are scheduled. Students function as group leaders. Case studies, group dynamics, and therapeutic activities are included. Field/practicum activities are reviewed. PREREQUISITES: 7017, 7018, and concurrent enrollment in 7020

3 credits

7022 – Seminar and Review

Continuation of 7021. Final Review of field work activities. Preparation for job placement included. PREREQUISITES: 7017, 7018, 7019, 7021, and concurrent enrollment in 7020

3 credits

7023 – Dental Assisting Techniques 1

This course combines lectures, demonstrations and student participation in the care and use of all types of dental instruments and materials including operative materials and instruments, preparation of impression materials and pouring casts, along with other related procedures. Terminology and instrument recognition are emphasized in this introductory course.

2 credits

7024 – Dental Assisting Techniques 2

A continuation of the first semester, this course seeks to advance the skill and dexterity of the student in all techniques. There is a coordination of activities to combine efficient chairside performance with general assisting tasks. Included in this semester is custom tray and other advanced prosthetic procedures.

6 credits

7025 – Dental Sciences 1

The basic Dental Sciences are studied in this course including Bacteriology and Sterilization, Oral Pathology and Pharmacology. Knowledge of the specialized areas of dental practice is introduced and enriched through lectures, field trips and visual aids.

2 credits

7026 – Dental Sciences 2

A continuation of the first semester, this course includes Diet and Nutrition, Office Emergencies and First Aid, and Dental Health Education. Further studies of specialized fields of dentistry occur on a more advanced level.

2 credits

7027 – Medical Assisting Techniques 1

Presents theory and planned student activity in medical assisting techniques, skills, and behavior, including medical terminology, first aid, and medical ethics.

4 credits

7028 – Medical Assisting Techniques 2

A continuation of advanced theory and practice with introduction to selected laboratory procedures.

PREREQUISITE: 7027

5 credits

7029 — Medical Assisting Procedures 1

Includes theory and planned student activity in semitechnical medical techniques, skill, and behavior. Medical terminology and medical ethics are emphasized throughout the course.

3 credits

7031 — Introduction to Clinical Laboratory

This course is designed to provide the student with a background in professional and medical ethics through lectures and audiovisual aids. Medical terminology, proper use and care of laboratory equipment and reagents are taught. The largest proportion of time is spent in clinical microscopy and medical microbiology with lectures and actual laboratory sessions providing learning experiences. Field trips to affiliating hospitals are arranged. 4 lecture hours and 9 lab hours.

6 credits

7032 — Hematology and Coagulation

The hemopoetic system, the origin and development of human blood cells, their function, normal and abnormal findings are the bases for this course. Coagulation factors and their role in health and disease are studied. 3 lecture hours and 10 lab hours.

5 credits

7033 — Clinical Chemistry

Designed to acquaint the student with the principles of gravimetric, volumetric and colormetric analyses as applied to blood and other body fluids, this course stresses manual methods. Quantitative analyses are determined spectrophotometrically. Preparation of solutions and calibration of instruments are included. Students are introduced to automative equipment through audio-visual aides. 4 lecture hours and 8 lab hours.

6 credits

7034 – Immunohematology and Serology

Immunohematology provides the student with a background in the principles involved in preparing blood for transfusion purposes; the ABO system and Rh factors are studied. Compatibility testing is also taught. Hemolytic disease of the newborn and the identification of antibodies are included.

Lectures in social diseases and the investigation of such by laboratory methods are included in the serology program. Serological tests for antibodies to some bacteria such as streptococcus are also taught. 4 lecture hours and 8 lab hours.

6 credits

7035, 7036 – Clinical Lab Practicum

Supervised clinical experience is assigned in an affiliated hospital laboratory under the supervision of a medical technologist (ASCP) or pathologist. The rotation schedule provides experience in the following departments: Blood Bank, Chemistry, Hematology, Microbiology, Serology, and Urinalysis. (Includes summer session)

12 credits

7037 – Physical Therapy Assisting Techniques 1

This course provides a survey of Physical Therapy and its relation to the medical environment. Emphasis is placed on the relationship of the assistant to the registered professional Physical Therapist. Equipment, modes of treatment, and elementary skills will be introduced. Field trips for orientation and observation will be planned.

3 credits

7038 – Physical Therapy Assisting Techniques 2

This course provides lecture and laboratory work in the study and application of hydrotherapy, electrotherapy, radiation, and their physiological effects. Principles of massage techniques are included. PREREQUISITE: Physical Therapy Assisting Techniques 1 (7037)

3 credits

7039 – Physical Therapy Assisting Techniques 3

The student studies mechanical and physiological concepts of exercise programs with emphasis on the problems related to the patient's motor involvement. Laboratory experience is provided to develop the skill of the student in application of various assistive devices. PREREQUISITE: Dynamics of Human Motion (7006)

3 credits

7040, 7041 – Supervised Clinical Experience 441, 442

Supervised practice in selected clinical settings. PRE-REQUISITES: Physical Therapy Assisting Techniques 1, 2, and 3 (7037, 7038, and 7039)

6 credits each

7042 – Physical Therapy Assistant Seminar

Designed to correlate classroom work with clinical experience.

3 credits

7043, 7044 – Scalp Treatments and Hair Conditioning 1, 2

Skillful training in treating scalp and hair conditions including manipulations of the scalp, neck, shoulders; use of electrical appliances, and the application of cosmetics.

1 credit each

7045, 7046 – Manicuring 1, 2

Theory and practice in procedures of plain and oil manicures, nail repair, nail building, hand and arm massage.

1 credit each

7047 – Facials/Make-up

Techniques studied are facial massage, contour make-up, choice of cosmetics to facial type, and the technique of applying make-up.

1 credit

7048 – Rudiments of Cosmetic Dermatology

Basic knowledge in the classes of diseases, allergies, terminology, primary and secondary lesions, diseases of hair, glands, and abnormalities of nails. The need for professional cooperation is stressed.

2 credits

7049 – Curl Control Techniques

Includes standard hair relaxing processes both physical and chemical, importance of test curls, care of permanently relaxed hair, and special problems in hair straightening.

4 credits

7050 — Cold Waving

Theory and practical skills in correct methods of permanent waving hair. Training includes sectioning of hair, winding, processing, and neutralizing techniques.

4 credits

7051 — Basic Styling Techniques

Training is provided in plain finger waving, and in the proper use of sculpture, cascade and spiral curls, locks and rollers.

2 credits

7052 — Hair Shaping

Skill is developed in correct use of scissors and razor for hair shaping. Practice is provided in trimming of necklines, tapering, and thinning hair.

1 credit

7053 — Hair Coloring

Fundamental course in hair tinting including application of tints. Various methods used are retouch application, pre-disposition testing, tint-back, bleaching, and corrective work on problem hair.

3 credits

7054 — High Fashion Toning

Advanced training in hair decolorizing and toning. Practical training includes streaking, frosting, highlighting, and marbleizing.

4 credits

7055 — Artistic Hair Styling

A study is made in the art and development of individual hair style creation and design.

1 credit

7056 — Shampoo and Rinses

Theory and practice develop manipulative skill for shampooing and rinsing. The various kinds of shampoos taught are plain, hot oil, creme, egg, liquid dry, and powder dry. The rinses include acid, creme, bluing, and color.

1 credit

7057 — Style Shaping

Advanced hair shaping techniques applied to specific hair styles and facial types.

1 credit

7058 — Therapeutic Facials/Contour Make-up

Practical training in the procedures and treatment of primary skin conditions. The various methods include acne, pack, hot-oil masque facials, avoidance of medical conditions, cooperation with physicians, ethics in facial treatment, lectures of special interest, correction of cosmetic defects, photographic make-up, methods of removing hair, depilation by chemicals, tweezing, and with waxes.

1 credit

7059 — Visual, Poise and Charm

The importance of good grooming, voice, posture, nutrition, public speaking, and wardrobe planning is stressed.

1 credit

7060 — Wig Styling

Types and selection of hair pieces are studied in relation to individual application. Care and basic techniques in hair shaping and styling are emphasized.

1 credit

7061 — Anatomy and Physiology 401

A study of the bones, muscles, and nerves of the cranium, neck, face, shoulder, hand, wrist, and arm, vascular system, blood circulation, analysis of structure and types of hair, nails, and skin.

3 credits

7062 — Special Clinical Practice Summer 431

A continuation of 7035, 7036. Assigned during the summer session to meet the examination requirements for certification.

No credit

7063, 7064 – Supervised Clinical Experience 471, 472

Opportunity for the student to observe and to assist the surgeon and other members of the surgical team in the operating room and delivery room under the direct supervision of Registered Professional Nurses.

10 credits

7065 – Supervised Clinical Experience 411

This course provides an opportunity for the student to function as a Dental Assistant in an off-campus clinical facility. Under the supervision of professional personnel, the student tests her basic knowledge in actual situations, learning from her performance, strengths and weaknesses while still in her training.

4 credits

7066 – Supervised Clinical Experience 421

Supervised clinical experience in assigned cooperating health-care agencies provides students with additional experience in clinics, wards, emergency rooms, and admitting and medical records offices.

3 credits

7072 – Fundamentals of Nursing

An introduction to contemporary nursing, scientific principles lay the foundation for the acquisition of requisite basic knowledge, skills and appreciation inherent in the person of the nurse who attempts to meet the needs of man in health and illness. The community-centered approach emphasizes the legal, professional and personal responsibilities of the nurse. Planned educative events within the laboratory setting of related health agencies are correlated with lecture periods to enhance the acquisition of scientific principles and skill development. Instructional modules with appropriate polysensory multi-media are utilized. Through a humanistic approach, emphasis is placed on assisting the student to develop an awareness and use of his/her intellectual processes toward self-growth, self-direction, self-discipline and self-evaluation. It includes basic concepts relating to: Health and the Practice of Nursing; Nursing Practice (Patient as a Person, as an Organism, and Ecology); Nursing Responsibilities in Relation to Specific Therapeutic Agents. Required of Freshman Students of Nursing. It is offered fall semester only.

6 credits

7073 – Parental and Child Nursing

The developmental approach is used to assist the student assimilate knowledge and understanding of the maternity cycle and the well child. The physiological, physical and psycho-social needs of the individual are considered as dependent on each other and indivisible from each other. Laboratory experience includes observation and participation in community hospitals and agencies. Parental and Child Health Nursing is concerned with the maternity cycle and with people involved in the family unit. It treats of: The American Family; Human Reproduction; Nursing in Pregnancy; Nursing during Labor and Delivery; Nursing in the Normal Puerperium; Maternal Disorders Associated with the Childbearing Cycle; Principles of Growth and Development from Infancy through Adolescence; The Normal Newborn; High Risk Neonate; Health Supervision. Required of all Students of Nursing. It is offered Spring Semester only. PREREQUISITE: 7072, 3 lecture hours and 12 lab hours.

7 credits

7074 – Mental – Physical Illness 1

A continuation of the behavioral learning outcomes of Fundamentals of Nursing and Parental-Child Nursing to foster the development of understandings, concepts and skills necessary to provide safe nursing care to people of all age groups when illnesses are encountered which necessitate short and/or long term adjustments in patterns of living.

Major health problems in the United States serve as a syllabus guide in the study of: The Assessment of the Patient; Cause and Prevention of Disease; Supportive and Therapeutic Modalities; Homeostatic Problems; Oncologic Nursing; Rehabilitation. Required of all Students of Nursing. It is offered fall semester only. 4 lecture hours and 15 lab hours. PREREQUISITE: 7073

9 credits

7075, 7076 – Mental and Physical Illness 2 and 3

A continuation of nursing in Mental and Physical Illness 1, highlighting the principles of nursing care of persons of all age groups with psycho-social problems in the hospital and other settings. It is a dual tract curriculum which is interchangeable during the semester. Tract 1 treats of: Nursing the Patient with Communicable Infections; The Patient with Problems of Neurologic-Orthopedic Continuity; Nursing in Emergency and Disaster Conditions; Nursing the Critically

ill. Tract 2 treats of: Introduction to Psychiatric Nursing; The Psychiatric Team; The Role of the Nurse in Child and Adolescent Psychiatry; Psychosomatic Medicine and Nursing; Nursing the Patient with a Psychiatric Problem; Psychiatric Treatments. Required of all students in nursing. It is offered spring semester only. 4 lecture hours and 18 lab hours. PREREQUISITE: 7074

10 credits

7077 – Nursing Seminar

A seminar approach to the role of the nurse as a technician/professional, and as a person in our contemporary society. Humanistic education techniques are utilized to identify student concerns relating to: The Profession of Nursing and its Social Setting; Legal, Professional and Personal Problems and Relations; Choosing, Preparing and Succeeding in a Field of Nursing; Professional Organizations and Related Activities. Required of Senior Students of Nursing. It is offered Spring Semester only. PREREQUISITE: 7074

2 credits

7078 – Fundamentals of Respiratory Therapy 1

The main purpose of this course is to form a broad base of knowledge which the student can use to expand towards competency in the field of Respiratory Therapy.

The lecture and discussion format is designed to cover aspects of subjects such as Medical Terminology, Anatomy and Physiology of cardio-pulmonary system as applied to Respiratory Therapy. Etiology of Respiratory Diseases is discussed in the relation to Air Pollution. Field trips to clinical facilities will be provided.

Offered annually, this course applies only to Respiratory Therapy students.

3 credits

7079 – Professional Relations and Administration

This course seeks to orient the student to dentistry and the various dental specialties and how they relate to each other and the dental team. Along with this, the student is exposed to a thorough knowledge of the State Dental Practice Act and Related Civil Law as well as the Code of Ethics of the American Dental Assistants Association. Also included in the course is dental terminology and basic dental office management.

2 credits

7080 – Medical Assisting Seminar and Field Work

General introduction to hospitals and health care agencies provides students with additional experience in applying cognitive learning to practical application.

6 credits

7081 — Fundamentals of Respiratory Therapy 2

This course will relate to the gas laws, principles of gas flow, and an introduction to the understanding of blood gases. Mechanical principles will also be covered and will include such equipment as cylinders, flowmeters, volume and pressure limited ventilators.

3 credits

7082 — Dental Materials

Theoretical background of the properties of dental materials is studied. Students learn the advantages, disadvantages, and indications for each of the common materials. Along with this, through demonstration and participation, the student gains the ability to manipulate these materials.

2 credits

7083 — Dental Radiology

A survey of dental radiology, this course includes the theoretical background of techniques of exposure, processing and recognition of dental structures. Safety precautions are stressed as the student learns intra-oral techniques through visual aids, demonstration, and actual practice on manikins.

1 credit

7084 — Dental Anatomy

Tooth morphology is stressed in a basic introduction for the dental assistant. Among the additional topics discussed are muscles of mastication, bones of skull, and the deciduous and permanent dentitions.

1 credit

7085 — Medical Assisting Techniques 3

This course is designed to help the student reach a better understanding and help in the development of advanced skills in medical assisting techniques. Specialized areas of medical practice, in relationship to psychological problems and nutrition, will be emphasized. Methods of instruction will include lectures and discussion, seminars and field trips. PREREQUISITES: 7027 and 7028

4 credits

7101 — Introduction to Early Childhood Education

Provides the student with an overview of the principles and philosophical development of early childhood including purpose, history, development, types of programs, and approaches to the early learning experience.

3 credits

7102 — Child Growth and Development

Provides the student with basic theories and research in growth and development. Emphasis is placed on the interaction of heredity and environment, the process of maturation, concept of intelligence, measurement of achievement, the application of classical and operant conditioning and language acquisition.

3 credits

7103 — Theories of Child Growth and Development

Provides the student with a concentrated look into the current theories of early learning both affective and cognitive. The research and work of Erik H. Erikson, Jean Piaget and Carl Rogers are studied and consideration is given to a lateral comparison of the three theories as well as specifics of the three theories in practice. PREREQUISITE: 7102

3 credits

7104 — Curriculum for Open Education 1

Provides the students with integrated experiences in applied early learning through lecture, discussion and workshops in movement, dramatics, art, science, and math. Students are helped to discover their own creative resources. PREREQUISITE: 7101

3 credits

7105 — Curriculum for Open Education 2

Provides the student with integrated experiences in applied early learning through lecture, discussion, and workshops in literature, story-telling, language development, reading and the techniques and uses of audio-visual aids as they enrich the integrated curriculum. The role of the adult in providing early learning experiences that foster self-directiveness and self-expressiveness in children is emphasized. PREREQUISITES: 7101 and 7104

4 credits

7106 — Survey of Current Early Learning Programs

Offers the students a survey of current programs in the field of early learning and examines their underlying rationale. Emphasis is placed on an eclectic approach to select the appropriate aspects of each program to meet the developmental needs of individual children. PREREQUISITES: 7101, 7102 and 7103

3 credits

7107 — Observation and Recording of Child Behavior

Provides the students with an opportunity to increase their objectivity and proficiency in observing and interpreting children's behavior. Lecture will comprise 25 percent of credit time and 75 percent will be spent rotating among 3 field placements. PREREQUISITES: 7103 and 7105

3 credits

7108 — Dynamics of Childhood Behavior

Provides the students with a deeper understanding of the behavior of children. Inquiry will be made into some of the major biological, sociological and psychological determinants which influence childhood behavior. The primary learning approach will be the use of individual case evaluations. PREREQUISITES: 7103, 7107

6 credits

7109 — Supervised Student Practicum

Supervised field experience in selected facilities planned in cooperation with community agencies and schools. Placements are for eighteen hours per week; two placements of eight weeks' duration each. The Practicum is taken in conjunction with Seminar and Critique, 7110, and Dynamics of Childhood Behavior, 7108. PREREQUISITES: 7101 - 7107, inclusive.

6 credits

7110 — Seminar and Critique

Provides for systematic evaluation of the total program as it relates to the individual student. Research and discussion center on methods, materials and content of early learning and include the role and responsibilities of professional and semi-professional personnel. Experiences encountered in student practicum placements are the basis for discussion. Taken simultaneously with 7109 and 7108. PREREQUISITES: 7101 - 7107, inclusive.

3 credits

7120 – Oral Anatomy

The detailed anatomy of individual teeth and adjoining structure is studied. Programmed instruction will be utilized, supplemented by lectures and seminars. The anatomy of the head and neck will be introduced. 2 hour lecture, 3 hour lab. Required for Freshman dental hygiene students.

3 credits

7121 – Introduction to Dental Hygiene

Lectures and Clinical Sessions which introduce scaling and polishing techniques first on manikins and then in the oral cavity. Methods of applying fluorides will be taught. Sterilization of instruments and prevention of disease transmission will be included. The lectures, laboratory and clinical sessions will be co-ordinated. 2 hour lecture, 6 hour laboratory. Required for Freshman dental hygiene students.

3 credits

7125 – Nutrition

A review of nutrients essential to human life followed by a study of the relationship between nutrients and oral health. Emphasis will be placed on illustrating the role of the hygienist in counseling patients regarding the effect of diet upon their teeth and gingiva. 2 hour lecture, required for Freshman dental hygiene students.

2 credits

7126 – Periodontology

This course is an introduction to periodontology, covering etiology, prognosis, and treatment of the periodontally involved patient. Techniques of history taking and oral inspection will be discussed; the role of the dental hygienist in patient education and preventive dentistry will be stressed. 2 hour lecture. Required for Freshman dental hygiene students.

2 credits

7127 – Dental Materials

The chemical and physical properties of materials used in all phases of dentistry are studied. Laboratory practice is provided to teach the manipulation of amalgam, waxes, stone, plaster, and other

materials used in dentistry. Along with this, the student is oriented to the various instruments of operative procedures. Required by Freshman dental hygiene students. 1 hour lecture and 3 hour lab.
2 credits

7128 — Oral Pathology and Histology

A study of the cells, tissues, and other microscopic elements that compose the oral cavity. Embryological development of oral structures will be considered. The fundamentals of the disease process and pathologic conditions of the oral cavity will be studied. Required for Freshman dental hygiene students. 3 hour lecture.
3 credits

7129 — Clinical Dental Hygiene 1

A continuation of Introduction to Dental Hygiene with supervised practice on child and adult patients. A series of lectures on the principles of radiology and the exposing and processing of radiographs will be followed by clinical practice. 1 hour lecture, 8 hour laboratory. Required of Freshman dental hygiene students.
3 credits

7130 — Community Health

A series of lectures designed to demonstrate the role of the hygienist on the health team. An introduction to the functions of other health professionals and their relationship to the community will be included. The hygienist as a resource person to teachers and health educators will be stressed. Required for Senior dental hygiene students. 3 hour lecture.
3 credits

7131 — Pharmacology

Study of drugs and their effects on living tissues. Emphasis will be placed on the drugs which are utilized in dentistry. Dosage, physical and chemical properties, and modes of administration will be considered. 2 hour lecture. Required for Senior dental hygiene students.
2 credits

7132 – Dental Specialties

Introduction to the principles and practices of the major specialities in dentistry. Orthodontics, Oral Surgery, Endodontics will be among the areas studied. 2 hour lecture. Required for Senior dental hygiene students.

2 credits

7138 – Practice Management

Medical and Dental Emergencies in the office are studied. Practice is given in the management of unexpected complications. Introduction to business procedures in the dental office. Various types of recall systems will be discussed. Ethics and jurisprudence as they apply to the dental profession will be examined. 3 hour lecture. Required for Senior dental hygiene students.

3 credits

7133, 7134 – Clinical Dental Hygiene 2 and 3

Continued practice in oral prophylaxis, radiology, and patient education. In addition to assignments at the college dental hygiene clinic, the student will practice her skills under supervision in hospitals and at a military dental installation. An introduction to chairside dental assisting will be provided. Required for senior dental hygiene students. 12 hour clinic per week.

3 credits

7135 – Medical Laboratory Technician Seminar

The purpose of this seminar is to provide the student an opportunity to maintain and improve the skills developed during the Clinical Laboratory Practicum – 7035. Independent study in the areas of clinical microbiology, hematology, chemistry and immunohematology is encouraged with the approval of the instructor. The class will meet once a week to discuss progress. Appropriate audio-visual instruction will be used as indicated by the projects chosen. Students enrolled in 7035 must take this seminar as a continuation of the CLP – 7035.

1 credit



ART AND MUSIC

— 8000 SERIES —

8080 — Music of Western Man

A survey course for the general student in which significant works from the several periods of art history will be heard and discussed. This course will be open to all students at the college. Outside listening and reading assignments will be scheduled and attendance at live concerts will be encouraged.

3 credits

8082 — A Survey of Non-Literary Arts 1

This course is intended to acquaint the student with man's most important achievements in architecture, sculpture, painting, and music through a nontechnical consideration of the principles of the design and structure underlying art expression. A survey of representative works from the important regions and historic periods contributing to modern Western culture will be included.

3 credits

8083 — A Survey of Non-Literary Arts 2

A continuation of Survey of Non-Literary Arts 1.
PREREQUISITE: 8082

3 credits

8084 — Introductory Music Theory and Harmony

A course for the student with some formal musical experience. Creative work in the forms of the common practice period will constitute the major part of the course work. One out of three sessions will be devoted to keyboard laboratory work, coupled with rhythmic, melodic and harmonic dictation. Selected listenings to recorded works will be presented. Admission by department approval.

3 credits

8085 — Harmony and Composition

A continuation of Introductory Music Theory and Harmony, encouraging greater creativity in student use of theoretical and harmonic materials. The student will be encouraged to experiment with harmonic and formal designs of larger scope and original design. Continued keyboard laboratory sessions will be aimed at developing the piano as a tool in the student's creative endeavors. The course will make available established materials in the art of orchestration and arranging with selected listenings. Admission by permission only.

3 credits

8087, 8088, 8089, and 8090 — Chorale

A mixed choral ensemble of up to sixty voices. Membership open to all students in the college. Selected works of the significant periods of music history will be studied, rehearsed, and performed in on-campus and off-campus concerts. Special musical accomplishment is not a prerequisite for membership.

1 credit per course

8092 — Introduction to Elements of Music

The basic structure of music (chords, melodies, rhythms, and music notation and form) will be analyzed with active participation through singing and elementary keyboard. Stress will be on developing ability to read music and transfer this aspect to the underlying principles of teaching music to children in elementary education. Orff and Kodaly methods will be presented. (Placement preference in this course will be offered to persons planning to major in elementary education).

3 credits

8093 — STCC Consort

A selected mixed choral ensemble of twelve to sixteen voices, auditioned from the STCC Chorale membership. Selected literature for small ensemble will be studied, rehearsed, and performed. Emphasis on the quality of literature and performance. (Parallel membership in the STCC Chorale required).

1 credit

8094 — Introduction to Keyboard Skills

A course designed to provide the student with the fundamentals of piano technique. Major and minor scales will be studied, together with arpeggios and chords in appropriate keys. Overall orientation to the keyboard will be accomplished through the study of elementary piano pieces and studies.

2 credits

8095 — Music for Early Childhood Education

An introductory course in the tenets of music, keyboard experience and practical musical activities suitable for use in nursery, kindergarten and primary programs. Also included will be workshop experiences in rhythmic movement, singing, dramatization and rhythm instruments.

3 credits

8096 — Art History 1

This is a course designed to familiarize the student with the major visual art expressions of ancient civilizations of Western man. Included will be a study of the painting, architecture, and sculpture of the following cultures: prehistoric man, Egypt, the ancient Near East, Mediterranean countries, early Christian and Byzantine art, Islamic art, Medieval art, and the art of the Gothic Period.

3 credits

8097 — Basic Drawing

This is a course designed for those persons who have had no previous training as well as those who have had some previous experience with visual expressioning. The objective of the course is to familiarize the student with a variety of media and their technical and expressive capabilities. Emphasis is divided between learning skills and applying them creatively to individual areas of interest. Four hours of class time.

3 credits

8098 — Pre-Renaissance Art of the Western World

Pre-historic cave paintings, ancient Egypt, Greece, Rome, the Romanesque and the Gothic periods of Europe. Emphasis on understanding man's impulse to express himself through visual arts.

3 credits

8101 — Early Childhood Art Education

This is a course designed to familiarize teachers in training with how children use art activities as means of growth and self-expression. Objective is to develop an understanding of the need for creative experiences for the very young child and to explore ways of structuring classroom situations which will allow for discovery, investigation, inventiveness, and individuality. By permission of instructor.

3 credits

8102 — Art History 2

This is a continuation of the study of the major visual art expression of Western man. The first semester's course may be helpful, but is not a prerequisite. Areas of study will include the late Gothic period north of the Alps, the Renaissance, Baroque and Rococo art of Italy, Germany, France, Spain, Flanders, Holland, and England. Emphasis is placed upon understanding the impulse behind man's artistic expressions and their links with the culture in which they are produced.

3 credits

8103 — Intermediate Keyboard Skills

A continuation of the elementary skills course. Selected works from the two and three-part inventions of Bach will be studied. Improvisation as a technique will be discussed and basic concepts put into practice. Admittance to the course upon completion of the elementary course or the satisfactory completion of a performance exam.

2 credits

8104 — Drawing Composition

Drawing will be approached as a basis of composition and training in observation. Emphasis will be placed on developing perceptual awareness and critical self-evaluation as means towards growth in individual ability to express one's self visually. Students will be encouraged to explore areas of personal interest.

PREREQUISITE: 8097 or permission

3 credits

PHYSICAL EDUCATION FIRE SCIENCE LAW ENFORCEMENT

— 9000 SERIES —



PHYSICAL EDUCATION

9080 — Physical Education-Men-Freshmen

Designed to improve physical fitness and to help the individual student to develop fundamental skills, knowledge, and appreciation of physical education activities. Individual and team activities are included in the course.

1 credit

9081 — Physical Education

Continued emphasis is placed on physical fitness and the development of fundamental skills. Aquatics and other activities of recreational nature are stressed to develop interest for carry-over activities.

1 credit

9082 — Physical Education-Women-Freshmen

Designed to provide recreational activity to improve individual skills, to develop body grace and efficiency, and to increase health and vigor.

1 credit

FIRE SCIENCE TECHNOLOGY

9504 — Hazardous Materials

This course includes a review of basic chemistry, storage and handling of hazardous materials, laws, standards and fire fighting practices within extreme fire hazard areas. Demonstrations will illustrate and supplement the class work. Required for graduation.

PREREQUISITE: Integrated Science 1 — 3319

3 credits

9770 — Introduction to Fire Protection

This course introduces the philosophy and history of fire protection, history of loss of life and property by fire, review of municipal fire defenses, study of the organization and function of Federal, State, and private fire protection agencies and a survey of professional fire protection career opportunities. Required for graduation. Concurrently with 9775

3 credits

9772 — Legal Aspects of Fire Protection

A study of legal rights and duties, liability concerns and responsibilities of the fire department organizations while carrying out their duties. PREREQUISITE: 9770

3 credits

9773 — Fundamentals of Fire Prevention

This course is concerned with the organization and function of fire prevention organization, inspections, surveying and mapping procedures, recognition of fire hazards, engineering a solution of the hazard, enforcement of the solution, and public relations as affected by fire prevention. Required for graduation.

PREREQUISITE: 9770 or 9775

3 credits

9774 — Fire Hydraulics and Equipment

Course in incompressible fluids including: fluid properties, principles of fluid status, fluid flow system principles, pipe friction and head loss, flow measurements, pumps, and other hydraulic devices and machinery. Applications are related to fire protection systems such as sprinklers, standpipes, hoses, nozzles, pumpers, and water supply systems. Demonstrations will illustrate and supplement the principles developed in class. Required for graduation. PREREQUISITES: College Algebra — 2331-34

3 credits

9775 — Building Construction

Exploration of building construction and design with emphasis focused on fire protection concerns, review of statutory and suggested guidelines, local, state, and national. Required for graduation. Concurrently with 9770

3 credits

9776 — Fire Fighting Tactics and Strategy

This course reviews fire chemistry, equipment and manpower, basic fire fighting tactics and strategy, methods of attack, preplanning fire problems. Fire situations are presented for analysis and study, consistent with accepted fire fighting practices. Required for graduation. PREREQUISITE: 9774

3 credits

9778 — Fire Protection Systems

The detection and extinguishing systems of both automatic and manual types are studied, including sprinkler and standpipe systems, inert gases, foam and dry chemicals, temperature and smoke responsive devices, and alarm and signaling system. Demonstration will illustrate and supplement the class work. Required for graduation. PREREQUISITE: 9773

3 credits

9779 — Advanced Protection Systems

This course is a continuation of 9778, and it is presented for those people interested in advanced fire control systems. Sprinkler systems will be given a great amount of attention in this course. Carbon dioxide, Dry Chemicals, Foam systems, Halogen agents will also be discussed.

3 credits

9780 — Organization and Management of Fire Departments

An exploration of organization principles with emphasis on fire department organization; a study of the history, types, methods and principles of fire department organization, both formal and informal, line and staff. Emphasis placed on supervisory responsibilities and functions. Required for graduation. PREREQUISITE: 9773

3 credits

9781 — Fire Causes and Detection (Arson)

This course concerns the history, development and philosophy of fire investigation and detection, including inspection techniques, gathering evidence and development of technical reports, fundamentals of arson investigation, processing of criminal evidence and criminal procedures related to various state and local statutes.

PREREQUISITE: 9773

3 credits

9784 — Fire Codes and Ordinances

A study of the history and development of codes which influence the field of fire prevention. Emphasis is placed on the nature and scope of legal statutes and related codes in fire prevention and control.

PREREQUISITE: 9775

3 credits

9785 — Public, Labor, and Human Relations

This course concerns labor negotiations and relations in general and the fire service in particular stressing competitive behavior. Theories are developed in terms of labor-management relations and problem solving processes which lend to identify, enlarge, and act upon the common interests of the parties in municipal or governmental roles. PREREQUISITE: 9780

3 credits

9786 — Special Occupancy Fire Systems

A study of the causes of fires, inspection and investigation procedures, and fire prevention. Identification and control of electrical, mechanical, and radioactive hazards are stressed along with industrial safety equipment and practices. PREREQUISITE: 9504

3 credits

9787 — Fire Company Officership

A study of the scope and functions of the fire company officer in the fire department. Topics discussed include the role of the fire service, departmental organization, administrative and management procedures, training, public relations, tactics and strategy, and fire prevention.

3 credits

9790 — Arson 2

A continuation of Fire Causes and Detection (Arson). PREREQUISITE: 9781

3 credits

LAW ENFORCEMENT

9753 — Criminal Law 1

This course explores and examines the substantive law of crimes, including the general and special areas of the Criminal Laws. Of special interest is a survey of crimes against the person. Crimes against Property, Parties to crimes, Defenses based on justification, and the nature of the criminal act and conduct. Emphasis is placed on analysis of elements of particular crimes, offenses, and punishments through an examination of the statutes and case example.

PREREQUISITE: 9761, or permission of Department Chairman

3 credits

9754 & 9764 — Criminal Procedures 1 & 2

To familiarize the student planning a career in law enforcement with the Constitutional requirements and safeguards attendant throughout the criminal process, from investigation through arrest, interrogation, indictment, trial, and sentencing. Included is an in-depth review of the Bill of Rights and its influence in modern society. Heavy emphasis is placed on actual case study and a review of recent Supreme Court decisions, especially as related to practical situations and problems confronting Law Enforcement personnel. Selected readings focus on practical application of Constitutional principles to practical situations. **PREREQUISITE:** Introduction to Criminal Justice, 9761 or Permission to Waive by Department Chairman.

3 credits each

9755 — Criminal Investigation

An introduction to field investigation, including conduct at the scene of the crime, interviewing and interrogation of witnesses and suspects, the use of informants, and techniques of surveillance. Emphasis is placed on special investigative techniques and on the court procedure of the police case. **PREREQUISITE:** 9754

3 credits

9756 & 9766 — Criminal Evidence 1 & 2

An analytical study of the rules of evidence, including such general areas as Relevancy and Materiality, Hearsay Evidence, Introduction of Writings, Competency and Privilege, and Parole Evidence rule. Probative matter legally presented at the trial of a criminal case

is given special attention. Also examined are rules concerning the admission of evidence in such specific areas as Search and Seizure, Pre-Trial Identifications, admission of confessions, electronic surveillance, presumptions and privileges. PREREQUISITES: 9754 & 9764 — Criminal Procedures 1 & 2, or permission of Department Chairman. 3 credits each

9761 — Introduction to Criminal Justice

An introduction and basic survey of criminal justice and the court systems, both state and federal. The course explores the concept of bail, the functions and roles of the Judge, Prosecutor, Grand Jury, Defense Attorney and Public Defenders, and sentencing in the courts. Also examined are the functions and objectives of the Probation Officer and Parole Officer, especially as related to rehabilitation of the offender. The role of the policemen in modern society is discussed and explored in detail.

3 credits

9769 — Law Enforcement Management & Planning

Consideration of police problems at the administrative level, including coordination of all branches of a police department. An evaluation of line, staff, and auxiliary functions and the interrelationship of each. The purpose, need, and scope of planning in the police operation, including staffing, collection of data, and use of data processing.

3 credits

9762 — Criminal Law 2

Continuation of Criminal Law 1. PREREQUISITES: 9753 and 9761.

3 credits

“To the rest of the world, technology is the key which will finally liberate humanity from the bondage of want and poverty.”

*— Harvey Brooks, Dean of Engineering
and Applied Physics, Harvard University*



Graduating Class of '69

The College is a nonsectarian, fully integrated institution of higher learning in compliance with the Civil Rights act of 1964 and welcomes all persons regardless of race, color, or national origin.

